



AUTOMATION GUIDE

Nikon microscopes

Introduction

We designed this brochure to provide in-depth information about the range of equipment compatible with Nikon microscopes. It covers the majority of current Nikon microscopes, as well as some earlier generation products of the same type.

Please do not hesitate to contact Prior Scientific if your microscope does not appear on this list as some of the products shown here may still be compatible.

More information about our products can be found by contacting a Prior representative, emailing **inquiries@prior.com** or by visiting **prior.com**.

We also have an extensive collection of datasheets freely available on our website or contacting Prior Scientific.

While every effort has been made to ensure that the products listed are compatible with each microscope, specific add-ons or configurations may render some products incompatible. We recommend contacting a Prior Scientific sales manager before ordering.

Please note that the parts may vary in availability and part numbers and specifications may change without warning. Whilst we have attempted to verify that the information here is accurate, we cannot guarantee that it is completely up to date and error free; thus we suggest contacting Prior before ordering in order to ensure that all equipment will be compatible with your microscope and suitable for your application. The microscopes featured here are for illustrative purposes only. All intellectual property relating to these microscopes, including patents and trademarks, remain the property of their respective owners. Nikon is a registered trademark of Nikon Instruments. ProScan®, OptiScan® and ZDeck® and the Prior Scientific logo are registered trademarks of Prior Scientific Ltd.

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ProScan III controller configuration guide

The ProScan III controller range can be used to control a wide range Prior Scientific’s microscope automation equipment. Choosing the correct controller is critical to ensuring that all of your chosen components can be used effectively. After selecting the hardware for your microscope, use the following guide to identify the correct controller. Systems which already utilize a ProScan III controller but cannot control some pieces of hardware may be upgraded using an ancillary box, depending on revision status.

Stages: Determine if your stage is a linear or stepper motor stages as these controllers are not interchangeable. All ProScan III controllers which can control stages also support encoders.

Focus: All ProScan III controllers which can control stepper motor focus systems also support encoders. Nanopositioning products in this configuration guide are supplied with their own controller, which can be operated through the ProScan III if desired. If using a H101E1F, H101E2F or encoded Z-deck with an encoded focus system please contact Prior Scientific before placing your order.

Filter wheels: For systems without a motorized stage or focus use the H31ZFE/V31F controller. Please note that it may not be possible to control more than 3 filter wheels with some third party software.

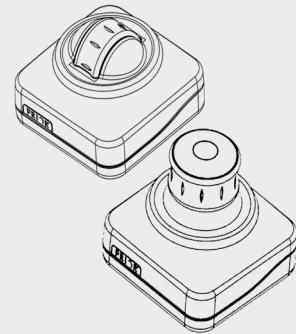
Shutters: For systems without a motorized stage or focus use the H31ZFE/V31F controller. Please note that it may not be possible to control more than 3 shutters with some third party software.

Metal Halide Illuminators: Third party software can control the L200S directly without the need for a controller. Alternatively, the built in shutter of the L200S and L220S can be controlled through any ProScan III controller which has a shutter port. The lamp on/off and shutter open/closed trigger ports can also be controlled though any controller with a trigger board. The L200 and L220 are completely standalone and does not require a ProScan III controller.

Autofocus: The PF850 autofocus is supplied with a standalone controller. No ProScan III controller is required.

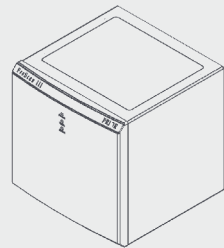
For motorized microscope upgrades on a lower budget, please contact Prior Scientific to learn more about our OptiScan product range.

CS200XY/ CS200Z



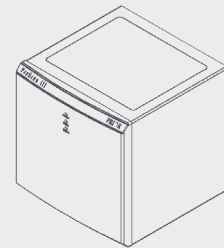
- XY and/or Z joystick control
- Programmable buttons

H31ZFE/V31F



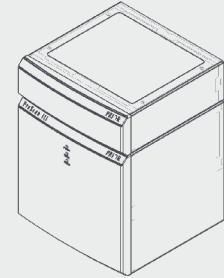
- 3x filter wheels
- 3x shutters
- L200S

H31XYZE/ V31XYZE



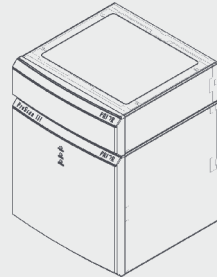
- XY stepper stage
- Z axis (excl. piezo)
- Encoders

V31XYZET



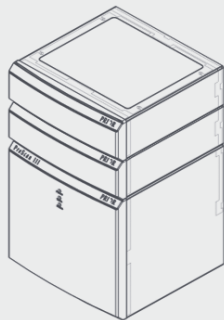
- XY stepper stage
- Z axis (excl. piezo)
- Encoders
- Trigger board

H31XYZEF/ V31XYZEF



- XY stepper stage
- Z axis (excl. piezo)
- Encoders
- 3x filter wheels
- 3x shutters
- L200S

V31XYZEFT



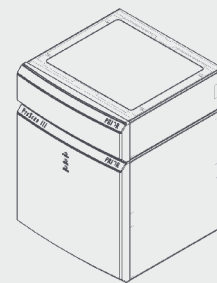
- XY stepper stage
- Z axis (excl. piezo)
- Encoders
- 3x filter wheels
- 3x shutters
- L200S
- Trigger board

V31XYZEF2



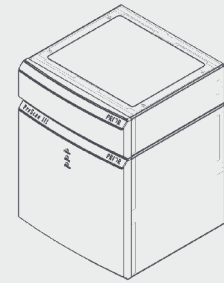
- XY stage
- Z axis (excl. piezo)
- Encoders
- 6x filter wheels
- 6x shutters
- L200S

VLD31XYZFG



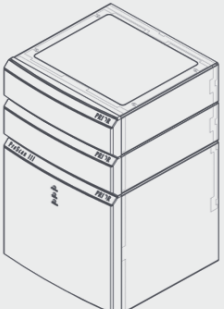
- XY linear stage
- Z axis (excl. piezo)
- Encoders
- 3x filter wheels
- 3x shutters
- L200S

VLD31XYZTG



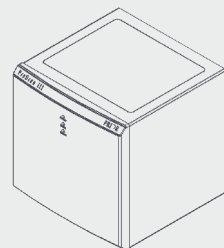
- XY linear stage
- Z axis (excl. piezo)
- Encoders
- Trigger board

VLD31XYZFTG



- XY linear stage
- Z axis (excl. piezo)
- Encoders
- 3x filter wheels
- 3x shutters
- L200S
- Trigger board

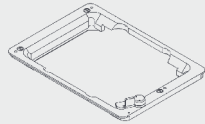
HLD31XYZG/ VLD31XYZG



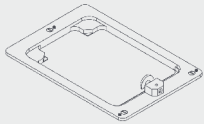
- XY stage
- Z axis (excl. piezo)
- Encoders

Nikon Ti2 configuration chart

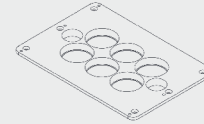
6 Sample holders



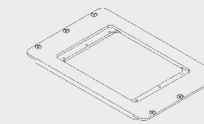
H223XRNC
Extra recessed for micro titer plates (85 x 128 mm)



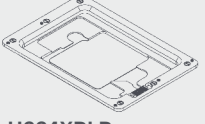
H234XR
Four slide holder, extra recessed



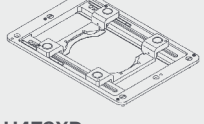
H658
Holder for six mounted metallurgical specimens




HLD324
Insert adapter assembly, HLD117NN



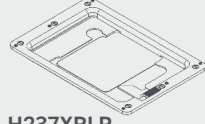
H224XRLP
Low profile 3 in x 1 in slide holder



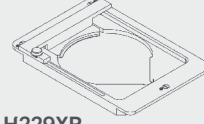
H473XR
Universal sample holder




H659
Holder for one mounted metallurgical specimen



H237XRLP
Low profile 3 in x 2 in slide holder

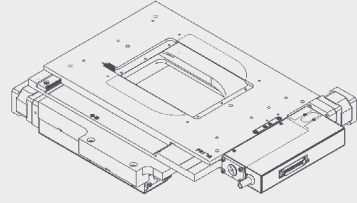


H229XR
Universal Petri dish holder

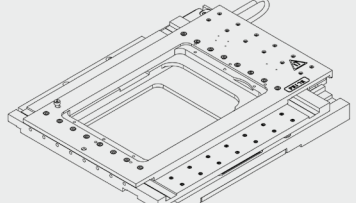


H649
Holder for a single mounted metallurgical specimen

1 Stages

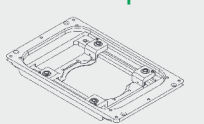


H117P1N4, H117E1N4
ProScan inverted stage

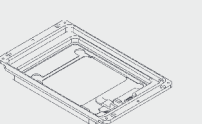


HLD117NN
Linear motor stage

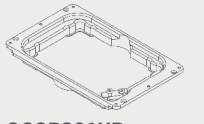
9 Nanopositioning sample holders




QGSP302XR
SP universal sample holder XR



QGSP303XR
Slide holder

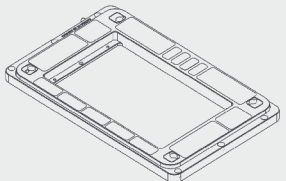


QGSP301XR
SP multiwell holder XR



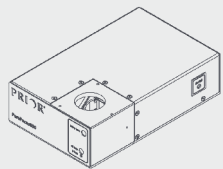
QGSPADAPT1/T2
adapter plate kits

9 Nanopositioning stages

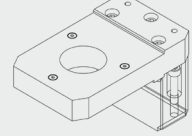


QGSP400-D1
QGSP600-D1
QGSP800-D1

4 Autofocus




PF850
PF head, controller with digipot power supply




PF212
Nikon Ti PureFocus kit

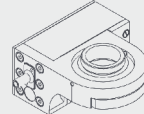
3 Objective positioner




QG-OP-MIC-M25
Generic focus drive and adapter



QG-OP-OBJ-M25
Direct fine focus coupling




QGOP-400-INV-D1
OP400 objective scanner system (0–500 g load)




QGOP-400-INV-HL-D1
OP400 objective scanner system (500–1000 g load)


5 Motorized focus



PS3H122R
Generic focus drive and adapter

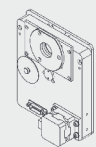


H2975
Focus sleeve

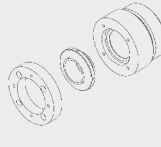


H122KT12
Direct coupling kit


8 Emission path



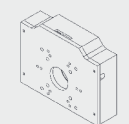
HF106A, HF108A, HF110A



HF255
Emission flange set (Nikon Ti)

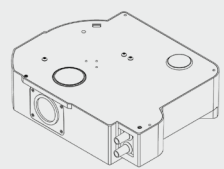


HF108A + HF201HT
HF110A + HF202HT




HF202HT
HF204HT

8 Deck inserts




HF6NTK
Nikon filter turret upgrade

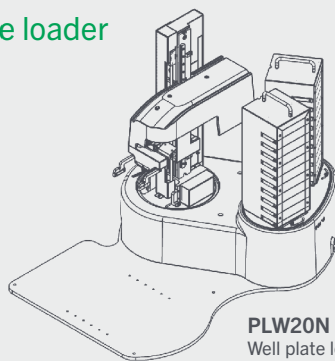
10 Well plate loader



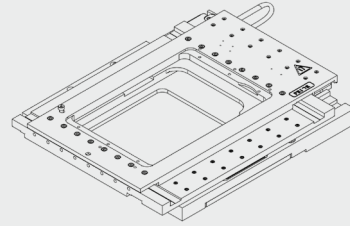
HLW223XR
High speed shutter



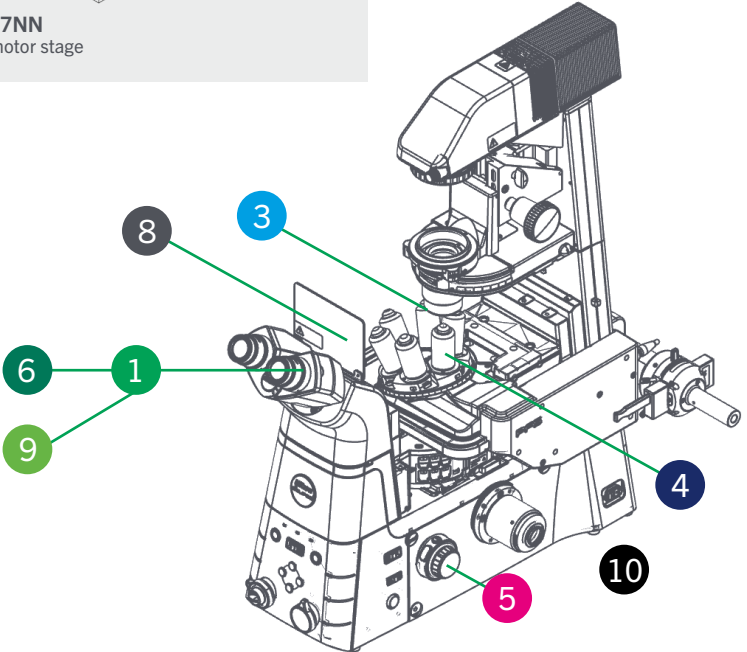
PLW106
Barcode reader



PLW20N
Well plate loader, Nikon



HLD117NN
Linear motor stage, Nikon Ti



See the following pages for more product information.

8 | PRIOR SCIENTIFIC | NIKON Ti2

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Nikon Ti2 configuration guide

The Nikon Ti2 has three variants: Ti2-U (non-motorized), Ti2-A (non-motorized, microscope status detection), and Ti2-E (fully motorized). Prior Scientific can supply motorized upgrades for all product types to the Ti2-U and Ti2-A. The Ti2-E can be upgraded with Prior Scientific stages, Queensgate nanopositioning stages and objective positioners can enhance the capabilities of this fully motorized system.

Motorized XY stages and sample holders

All the sample holders listed are compatible with the H117P1N4, H117E1N4, and HLD117NN. The HLD324 is required for Prior sample holders when using the HLD117NN. Nikon sample holders can be fitted to the HLD117NN only. At least one sample holder is required. Please contact Prior Scientific if using a water dispenser.

Part	Description
HLD117NN	Linear motor stage, Nikon Ti
H117P1N4	ProScan inverted stage, part encoded, 1 mm pitch, 400 step, Nikon Ti
H117E1N4	ProScan inverted stage, encoded, 1 mm pitch, 400 step, Nikon Ti
HLD324	Insert adapter assembly, HLD117NN
H473XR	Universal sample holder (slides, Petri dishes, small flasks), extra recessed
H224XRLP	Low profile 3 in x 1 in slide holder, extra recessed
H229XR	Universal Petri dish holder, extra recessed
H234XR	Four 3 in x 1 in slide holder, extra recessed
H23X200	200 ml flask holder (Greiner)
H237XRLP	Low profile 3 in x 2 in slide holder, extra recessed
H229D35XR-6	Holder for 6 x 35 mm Petri dishes
H649	Holder for a single 1 in, 1.25 in and 1.5 in mounted metallurgical specimen
H657	Holder for one mounted metallurgical specimen, 2 in diameter
H658	Holder for six mounted metallurgical specimens, 1.25 in diameter
H659	Holder for one mounted metallurgical specimen, 15 in diameter with 1, 2, 4, or 8 chambers

Nanopositioning stages and sample holders

Nanopositioning stages require a suitable motorized stage for mounting. They can be directly mounted to the H117P1N4 and H117E1N4. They can be mounted on the HLD117NN via the QGSPADAPT2 adapter. They can be mounted on Nikon motorized stages via the QGSPADAPT1 adapter; please contact Prior to verify your stage model is compatible. Other motorized stage models are not compatible. Note that a sample holder from the nanopositioning stage section is required for use and replaces the sample holder fitted to the motorized stage. Prior nanopositioning stages can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured nanopositioning stages can also be purchased exclusively from Nikon.

Part	Description
QGSP400-D1	System SP400, 400 µm travel, and NPC-D-6110 controller
QGSP600-D1	System SP600, 600 µm travel, and NPC-D-6110 controller
QGSP800-D1	System SP800, 800 µm travel, and NPC-D-6110 controller
QGSP301XR	SP multiwell holder XR
QGSP302XR	SP universal sample holder XR
QGSP303XR	SP single slide holder suitable for 1 in x3 in and 2 in x3 in slides
QGSPADAPT1	SP400 to Nikon Ti2 motorized stage adapter plate kit
QGSPADAPT2	SP400 to HLD117NN adapter plate kit

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to fit the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; don’t hesitate to contact Prior Scientific if the nosepiece uses an alternative thread size. Some Ti nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. These spacers are also used to ensure any other objectives are parfocal. When using objective spacers the QG-OP RAISE-KIT-M5-12 is recommended to maintain the travel range of the inherent microscope Z-axis. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-INV-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-INV-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective
QG-OP-RAISE-KIT-M5-12	XY stage raiser kit for inverted setup of OP400/OP800 M5 12mm

Motorized focus

The PS3H122R plus H2975 combination is required to drive the fine focus knob of the microscope. The coarse focus will not be motorized. The H122KTi2 direct coupling can be added for more precise motorized control.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H2975	Nikon Ti, Ti2 & Ts2R focus sleeve
H122KTi2	Direct fine focus coupling kit for Nikon Ti2

Autofocus

The PF850 is standalone hardware autofocus. The PF212 kit is required for mounting on the Ti2-U and Ti2-A. The PF200, PF209 and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems. Please contact Prior Scientific for compatibility with the Ti2-E. The Nikon Ti2-LA-SU kit is required to mount the PF850 onto the Ti2-U and Ti2-A, and can be purchased directly from Nikon. The PF850 cannot be mounted on any Ti2 that is currently equipped with the Nikon PFS system.

Part	Description
PF850	PF head, controller with digipot power supply, cables
PF212	Nikon Ti PureFocus kit
PF209	PureFocus setup sample slide
PF201	PureFocus setup camera alignment target type 1, RMS.DIA 0.8 x 36
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Emission path

The HF255 adapter is required for fitting shutter and filter wheels to the emission port of the microscope. 32 mm shutters and filter wheels are recommended for widefield applications. Contact Prior Scientific if using an F-mount camera or if you require excitation path accessories.

Part	Description
HF255	Emission flange set (Nikon Ti)
HF204HT	High speed shutter (high temperature), 32 mm aperture, for stand alone use
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

Deck inserts

The HF6NTK is an upgrade to the standard Nikon Ti2 6-position turret to enable it to be controlled via Prior’s ProScan III controller. Both the turret and shutter can be controlled.

Part	Description
HF6NTK	Nikon filter turret upgrade Ti2 (MOTFILTTi2A)

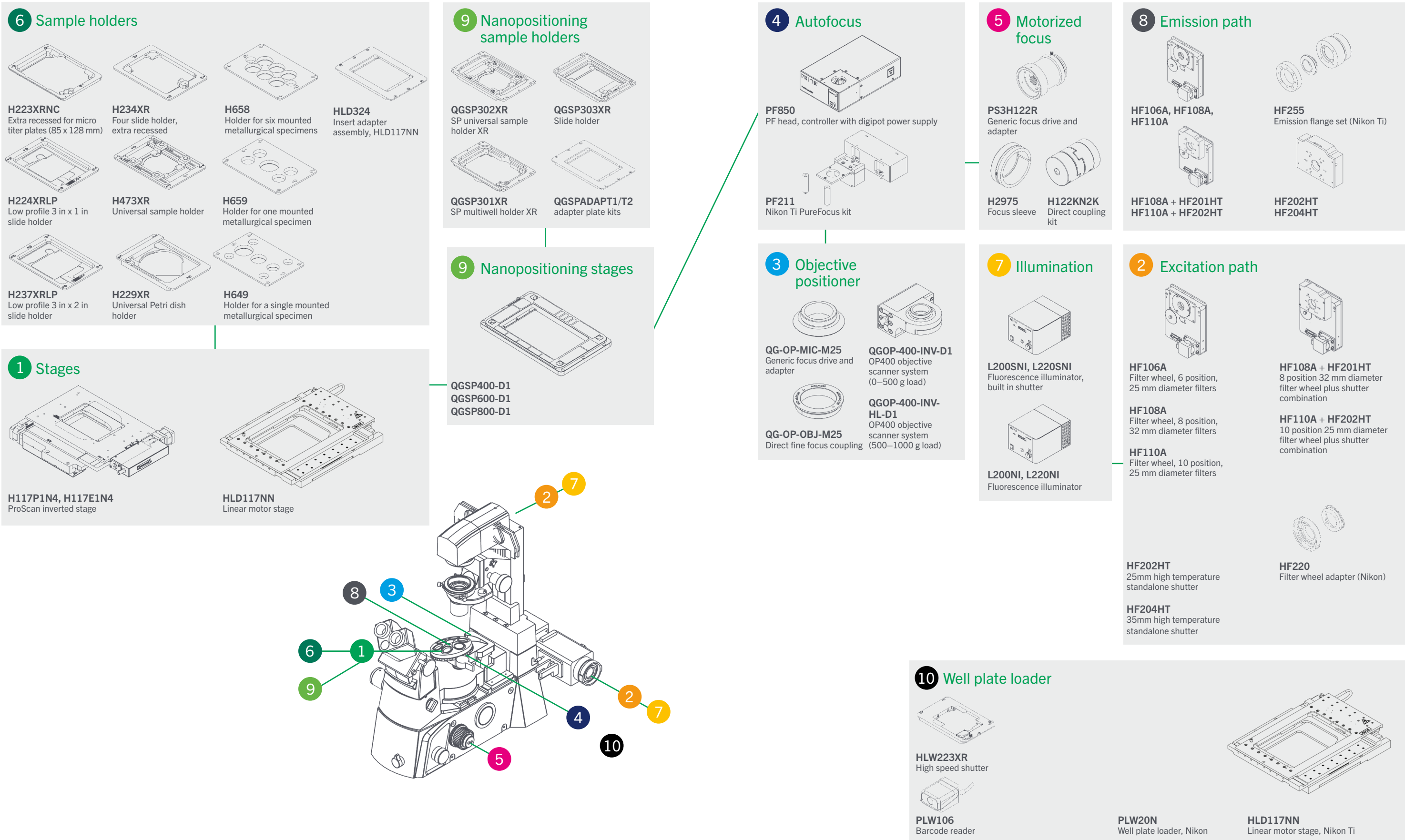
Well plate loader

The PLW20N can be controlled by NIS elements combined with the HLD117NN stage. No other stages are compatible. The HLW223XR is required and fits directly into the HLD117NN without an adapter. The PLW106 barcode reader is an optional extra but must be specified at the point of purchase for calibration. Please contact Prior is using the PLW20N with water dispenser.

Part	Description
PLW20N	Well plate loader, Nikon
HLD117NN	Linear motor stage, Nikon Ti
HLW223XR	High speed shutter (high temperature), 32 mm aperture, for stand alone use
PLW106	Barcode reader well-plate loader

Nikon Ti configuration chart

See the following pages for more product information.



Nikon Ti configuration guide

The Nikon Ti has three variants: Ti-U (non-motorized), Ti-S (non-motorized, second imaging port), and Ti-E (fully motorized). Prior Scientific can supply motorized upgrades for all product types to the Ti-U and Ti-S. The Ti-E can be upgraded with Prior Scientific stages, nanopositioning stages, objective positioners, and autofocus, which enhance the capabilities of this fully motorized system.

Motorized XY stages and sample holders

All the sample holders listed are compatible with the H117P1N4, H117E1N4, and HLD117NN. The HLD324 is required for Prior sample holders when using the HLD117NN. Nikon sample holders can be fitted to the HLD117NN only. At least one sample holder is required.

Part	Description
HLD117NN	Linear motor stage, Nikon Ti
H117P1N4	ProScan inverted stage, part encoded, 1 mm pitch, 400 step, Nikon Ti
H117E1N4	ProScan inverted stage, encoded, 1 mm pitch, 400 step, Nikon Ti
HLD324	Insert adapter assembly, HLD117NN
H473XR	Universal sample holder (slides, Petri dishes, small flasks), extra recessed
H224XRLP	Low profile 3 in x 1 in slide holder, extra recessed
H229XR	Universal Petri dish holder, extra recessed
H234XR	Four 3 in x 1 in slide holder, extra recessed
H23X200	200 ml flask holder (Greiner)
H237XRLP	Low profile 3 in x 2 in slide holder, extra recessed
H229D35XR-6	Holder for 6 x 35 mm Petri dishes
H649	Holder for a single 1 in, 1.25 in and 1.5 in mounted metallurgical specimen
H657	Holder for one mounted metallurgical specimen, 2 in diameter
H658	Holder for six mounted metallurgical specimens, 1.25 in diameter
H659	Holder for one mounted metallurgical specimen, 15 in diameter with 1, 2, 4, or 8 chambers

Nanopositioning stages and sample holders

Nanopositioning stages require a suitable motorized stage for mounting. They can be directly mounted to the H117P1N4 and H117E1N4. They can be mounted on the HLD117NN via the QGSPADAPT2 adapter. They can be mounted on Nikon motorized stages via the QGSPADAPT1 adapter; please contact Prior to verify your stage model is compatible. Other motorized stage models are not compatible. Note that a sample holder from the nanopositioning stage section is required for use and replaces the sample holder fitted to the motorized stage. Prior nanopositioning stages can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured nanopositioning stages can also be purchased exclusively from Nikon.

Part	Description
QGSP400-D1	System SP400, 400 µm travel, and NPC-D-6110 controller
QGSP600-D1	System SP600, 600 µm travel, and NPC-D-6110 controller
QGSP800-D1	System SP800, 800 µm travel, and NPC-D-6110 controller
QGSP301XR	SP multiwell holder XR
QGSP302XR	SP universal sample holder XR
QGSP303XR	SP single slide holder suitable for 1 in x3 in and 2 in x3 in slides
QGSPADAPT1	SP400 to Nikon Ti2 motorized stage adapter plate kit
QGSPADAPT2	SP400 to HLD117NN adapter plate kit

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to fit the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; don’t hesitate to contact Prior Scientific if the nosepiece uses an alternative thread size. Some Ti nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. These spacers are also used to ensure any other objectives are parfocal. When using objective spacers the QG-OP RAISE-KIT-M5-12 is recommended to maintain the travel range of the inherent microscope Z-axis. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-INV-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0–500 g load)
QGOP-400-INV-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500–1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective
QG-OP-RAISE-KIT-M5-12	XY stage raiser kit for inverted setup of OP400/OP800 M5 12mm

Motorized focus

The PS3H122R plus H2975 combination is required to drive the fine focus knob of the microscope. The coarse focus will not be motorized. The H122KN2K direct coupling can be added for more precise motorized control.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H2975	Nikon Ti , Ti2 & Ts2R focus sleeve
H122KN2K	Direct coupling kit, focus drive assembly

Autofocus

The PF850 is standalone hardware autofocus. The PF211 kit is required for mounting. The PF200, PF209 and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems. When used with the Nikon Ti-E, the PF850 can only be used with piezo nanopositioning systems.

Part	Description
PF850	PF head, controller with digipot power supply, cables
PF211	Nikon Ti PureFocus kit
PF209	PureFocus setup sample slide
PF201	PureFocus setup camera alignment target type 1, RMS.DIA 0.8 x 36
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Illumination

The L200NI and L200SNI are recommended for fluorescence microscopy, [see datasheet for details](#). The L200SNI has a built-in shutter mechanism that can be controlled via a ProScan III controller, so a standalone shutter is not required.

Part	Description
L200SNI	L200 standard box, lamp, light guide, shutter and Nikon collimator
L200NI	L220 standard box, lamp, light guide and Nikon collimator
L220SNI	L220 standard box, lamp, light guide, shutter and Nikon collimator
L220NI	L220 standard box, lamp, light guide and Nikon collimator

Excitation path

Filter wheels are not supplied with filters. Contact Prior Scientific if you wish to purchase a filter wheel stand that can be fixed to an optical table. For systems requiring a shutter and filter wheel, buying one of the combinations listed above is recommended. The HF220 adapter is required for filter wheels and shutters in the main episcopic illumination pathway.

Part	Description
HF220	Filter wheel adapter (Nikon)
HF202HT	25 mm high temperature standalone shutter
HF204HT	35 mm high temperature standalone shutter
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

Emission path

The HF255 adapter is required for fitting shutter and filter wheels to the emission port of the microscope. 32 mm shutters and filter wheels are recommended for widefield applications.

Part	Description
HF255	Emission flange set (Nikon Ti)
HF202HT	25mm high temperature standalone shutter
HF204HT	High speed shutter (high temperature), 32 mm aperture, for stand alone use
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

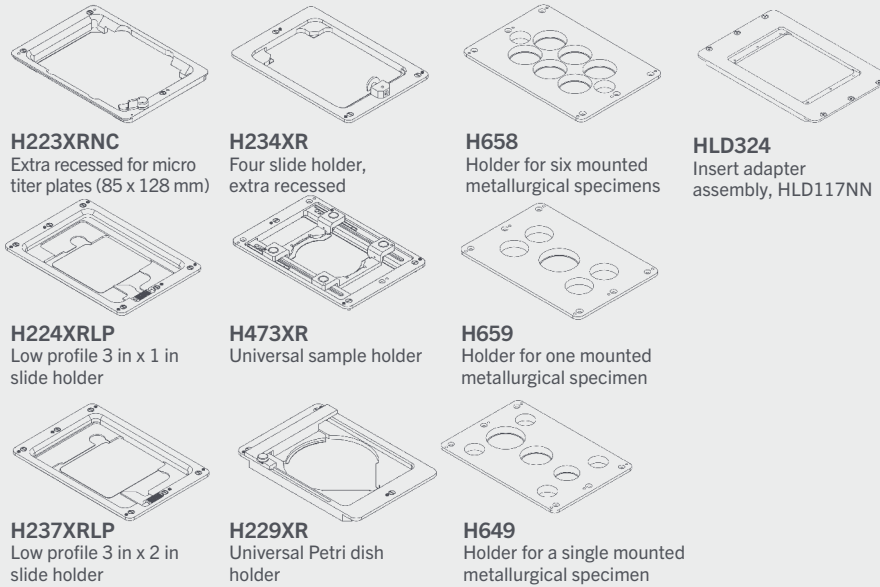
Well plate loader

The PLW20N can be controlled by NIS elements combined with the HLD117NN stage. No other stages are compatible. The HLW223XR is required and fits directly into the HLD117NN without an adapter. The PLW106 barcode reader is an optional extra but must be specified at the point of purchase for calibration.

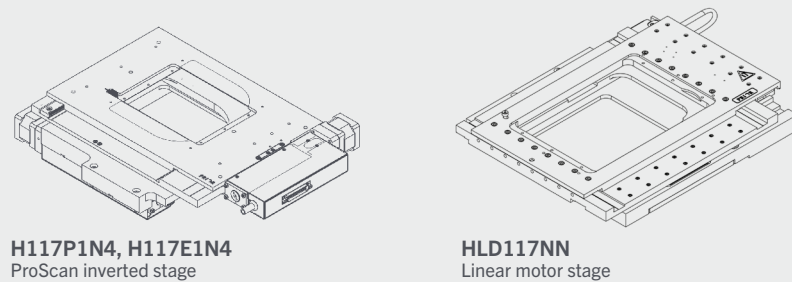
Part	Description
PLW20N	Well plate loader, Nikon
HLD117NN	Linear motor stage, Nikon Ti
HLW223XR	High speed shutter (high temperature), 32 mm aperture, for stand alone use
PLW106	Barcode reader well-plate loader

Nikon Ts2R configuration chart

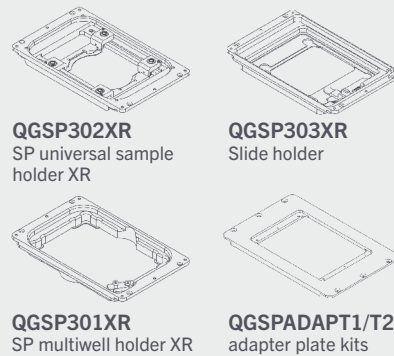
6 Sample holders



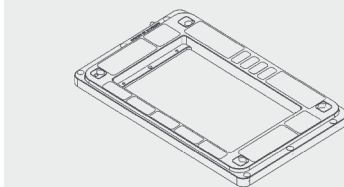
1 Stages



9 Nanopositioning sample holders

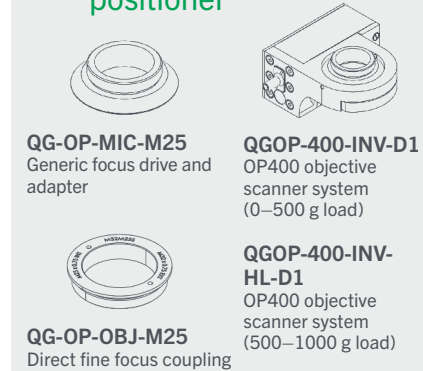


9 Nanopositioning stages



- QGSP400-D1
- QGSP600-D1
- QGSP800-D1

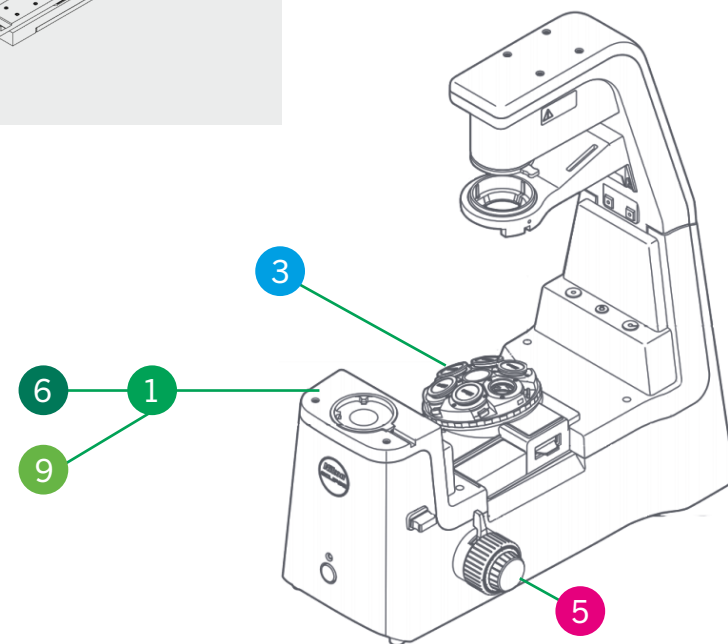
3 Objective positioner



5 Motorized focus



See the following pages for more product information.



Nikon Ts2R configuration guide

The Nikon Ts2R is a manual laboratory microscope. Prior Scientific’s upgrades for this microscope focus on XYZ motorization and nanopositioning solutions.

Motorized XY stages and sample holders

All the sample holders listed are compatible with the H117P1N4, H117E1N4, and HLD117NN. The HLD324 is required for Prior sample holders when using the HLD117NN. Nikon sample holders can be fitted to the HLD117NN only. At least one sample holder is required.

Part	Description
HLD117NN	Linear motor stage, Nikon Ti
H117P1N4	ProScan inverted stage, part encoded, 1 mm pitch, 400 step, Nikon Ti
H117E1N4	ProScan inverted stage, encoded, 1 mm pitch, 400 step, Nikon Ti
HLD324	Insert adapter assembly, HLD117NN
H473XR	Universal sample holder (slides, Petri dishes, small flasks), extra recessed
H224XRLP	Low profile 3 in x 1 in slide holder, extra recessed
H229XR	Universal Petri dish holder, extra recessed
H234XR	Four 3 in x 1 in slide holder, extra recessed
H23X200	200 ml flask holder (Greiner)
H237XRLP	Low profile 3 in x 2 in slide holder, extra recessed
H229D35XR-6	Holder for 6 x 35 mm Petri dishes
H649	Holder for a single 1 in, 1.25 in and 1.5 in mounted metallurgical specimen
H657	Holder for one mounted metallurgical specimen, 2 in diameter
H658	Holder for six mounted metallurgical specimens, 1.25 in diameter
H659	Holder for one mounted metallurgical specimen, 15 in diameter with 1, 2, 4, or 8 chambers

Nanopositioning stages and sample holders

Nanopositioning stages require a suitable motorized stage for mounting. They can be directly mounted to the H117P1N4 and H117E1N4. They can be mounted on the HLD117NN via the QGSPADAPT2 adapter. They can be mounted on Nikon motorized stages via the QGSPADAPT1 adapter; please contact Prior Scientific to verify your stage model is compatible. Other motorized stage models are not compatible. Note that a sample holder from the nanopositioning stage section is required for use and replaces the sample holder fitted to the motorized stage. Prior nanopositioning stages can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured nanopositioning stages can also be purchased exclusively from Nikon.

Part	Description
QGSP400-D1	System SP400, 400 µm travel, and NPC-D-6110 controller
QGSP600-D1	System SP600, 600 µm travel, and NPC-D-6110 controller
QGSP800-D1	System SP800, 800 µm travel, and NPC-D-6110 controller
QGSP301XR	SP multiwell holder XR
QGSP302XR	SP universal sample holder XR
QGSP303XR	SP single slide holder suitable for 1 in x3 in and 2 in x3 in slides
QGSPADAPT1	SP400 to Nikon Ti2 motorized stage adapter plate kit
QGSPADAPT2	SP400 to HLD117NN adapter plate kit

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to fit the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; don’t hesitate to contact Prior Scientific if the nosepiece uses an alternative thread size. Some Ts2R nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. These spacers are also used to ensure any other objectives are parfocal. When using objective spacers the QGOP-RAISE-KIT-M5-12 is recommended to maintain the travel range of the inherent microscope Z-axis. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-INV-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-INV-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective
QG-OP-RAISE-KIT-M5-12	XY stage raiser kit for inverted setup of OP400/OP800 M5 12mm

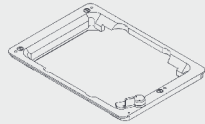
Motorized focus

The PS3H122R plus H2975 combination is required to drive the fine focus knob of the microscope. The coarse focus will not be motorized. The H122KON direct coupling can be added for more precise motorized control.

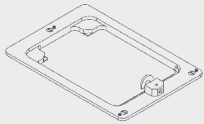
Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H2975	Nikon Ti , Ti2 & Ts2R focus sleeve
H122KTI2	Direct coupling kit, focus drive assembly

Nikon TE2000 configuration chart

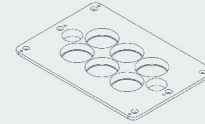
6 Sample holders



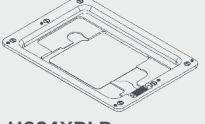
H223XRNC
Extra recessed for micro titer plates (85 x 128 mm)



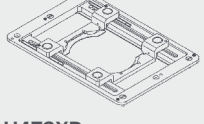
H234XR
Four slide holder, extra recessed




H658
Holder for six mounted metallurgical specimens



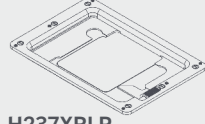
H224XRLP
Low profile 3 in x 1 in slide holder



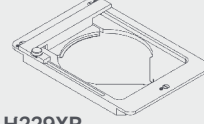
H473XR
Universal sample holder



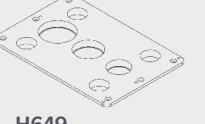
H659
Holder for one mounted metallurgical specimen



H237XRLP
Low profile 3 in x 2 in slide holder

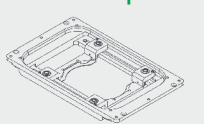


H229XR
Universal Petri dish holder

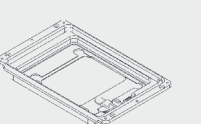


H649
Holder for a single mounted metallurgical specimen

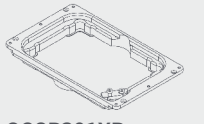
9 Nanopositioning sample holders




QGSP302XR
SP universal sample holder XR



QGSP303XR
Slide holder

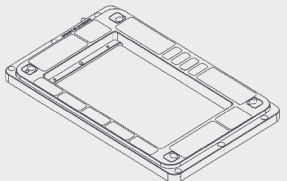


QGSP301XR
SP multiwell holder XR



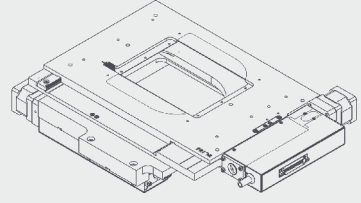
QGSPADAPT1/T2
adapter plate kits

9 Nanopositioning stages

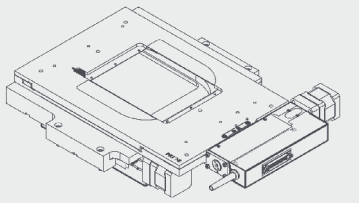


QGSP400-D1
QGSP600-D1
QGSP800-D1

1 Stages

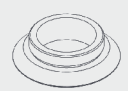


H117P1N4, H117E1N4
ProScan inverted stage

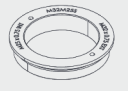


H117P1T4, H117E1T4
ProScan inverted stage

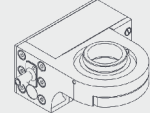
3 Objective positioner



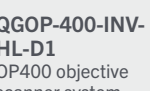
QG-OP-MIC-M25
Generic focus drive and adapter



QG-OP-Obj-M25
Direct fine focus coupling



QGOP-400-INV-D1
OP400 objective scanner system (0–500 g load)



QGOP-400-INV-HL-D1
OP400 objective scanner system (500–1000 g load)

5 Motorized focus



PS3H122R
Generic focus drive and adapter

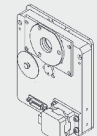


H2193
Focus sleeve

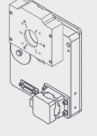


H122KN2K
Direct coupling kit

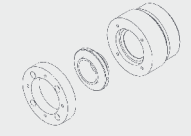
8 Emission path



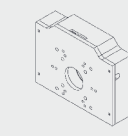
HF106A, HF110A



HF110A + HF202HT



HF255
Emission flange set (Nikon Ti)



HF202HT
HF204HT

7 Illumination

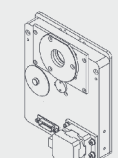


L200SNI, L220SNI
Fluorescence illuminator, built in shutter

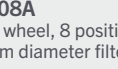


L200NI, L220NI
Fluorescence illuminator

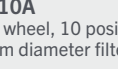
2 Excitation path




HF106A
Filter wheel, 6 position, 25 mm diameter filters



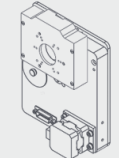
HF108A
Filter wheel, 8 position, 32 mm diameter filters



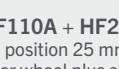
HF110A
Filter wheel, 10 position, 25 mm diameter filters



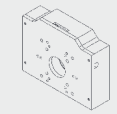
HF220
Filter wheel adapter (Nikon)



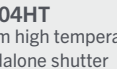
HF108A + HF201HT
8 position 32 mm diameter filter wheel plus shutter combination



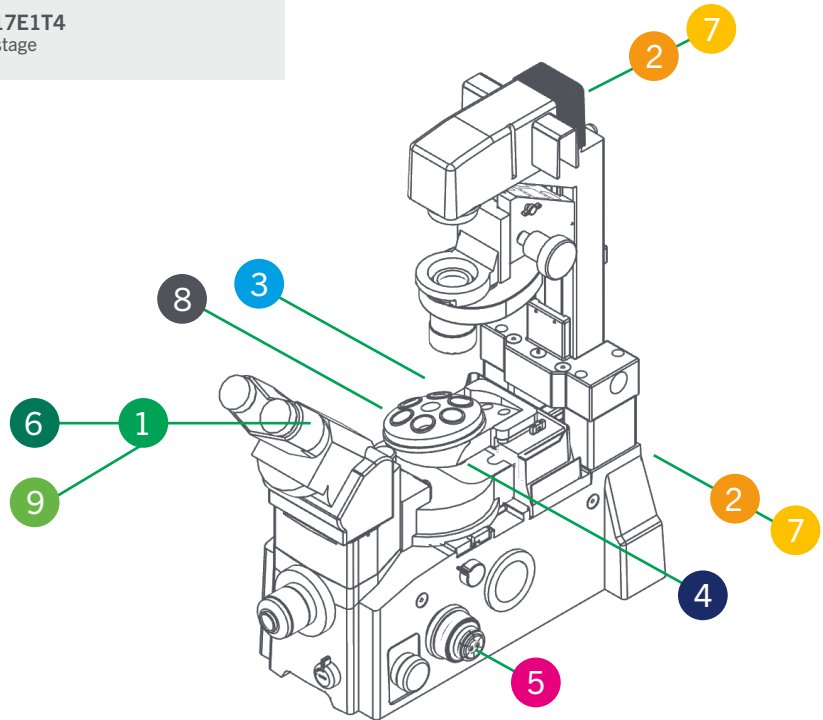
HF110A + HF202HT
10 position 25 mm diameter filter wheel plus shutter combination



HF202HT
25mm high temperature standalone shutter



HF204HT
35mm high temperature standalone shutter



See the following pages for more product information.

Nikon TE2000 configuration guide

The Nikon TE2000 is an older generation inverted microscope. Prior Scientific can provide multiple upgrades for this microscope.

Motorized XY stages and sample holders

All the sample holders listed are compatible with the H117P1N4, H117E1N4, H117P1T4, and H117E1T4. At least one sample holder is required. Nikon TE2000s with a non-motorized filter turret can be fitted with the H117P1N4 and H117E1N4. Nikon TE2000s with a motorized filter turret can only be fitted with the H117P1T4 and H117E1T4. An OptiScan alternative (ES107NTE) to the H117P1T4/H117E1T4 is available.

Part	Description
H117P1N4	ProScan inverted stage, part encoded, 1 mm pitch, 400 step, Nikon TE2000 non-motorized filter turret
H117E1N4	ProScan inverted stage, encoded, 1 mm pitch, 400 step, Nikon TE2000 non-motorized filter turret
H117P1T4	ProScan inverted stage, part encoded, 1 mm pitch, 400 step, Nikon TE2000
H117E1T4	ProScan inverted stage, encoded, 1 mm pitch, 400 step, Nikon TE2000
H473XR	Universal sample holder (slides, Petri dishes, small flasks), extra recessed
H224XRLP	Low profile 3 in x 1 in slide holder, extra recessed
H229XR	Universal Petri dish holder, extra recessed
H234XR	Four 3 in x 1 in slide holder, extra recessed
H23X200	200 ml flask holder (Greiner)
H237XRLP	Low profile 3 in x 2 in slide holder, extra recessed
H229D35XR-6	Holder for 6 x 35 mm Petri dishes
H649	Holder for a single 1 in, 1.25 in and 1.5 in mounted metallurgical specimen
H657	Holder for one mounted metallurgical specimen, 2 in diameter
H658	Holder for six mounted metallurgical specimens, 1.25 in diameter
H659	Holder for one mounted metallurgical specimen, 15 in diameter with 1, 2, 4, or 8 chambers

Nanopositioning stages and sample holders

Nanopositioning stages require a suitable motorized stage for mounting. They can be directly mounted to the H117P1N4 H117P1T4, H117E1T4 and H117E1N4. They can be mounted on some Nikon stages via the QGSPADAPT1 adapter; please contact Prior Scientific to verify your stage model is compatible. Other motorized stage models are not compatible. Note that a sample holder from the nanopositioning stage section is required for use and replaces the sample holder fitted to the motorized stage. Prior Scientific nanopositioning stages can be controlled via NIS Elements by serial port connection. Alternative Prior Scientific/Queensgate manufactured nanopositioning stages can also be purchased exclusively from Nikon.

Part	Description
QGSP400-D1	System SP400, 400 µm travel, and NPC-D-6110 controller
QGSP600-D1	System SP600, 600 µm travel, and NPC-D-6110 controller
QGSP800-D1	System SP800, 800 µm travel, and NPC-D-6110 controller
QGSP301XR	SP multiwell holder XR
QGSP302XR	SP universal sample holder XR
QGSP303XR	SP single slide holder suitable for 1 in x3 in and 2 in x3 in slides
QGSPADAPT1	SP400 to Nikon Ti2 motorized stage adapter plate kit
QGSPADAPT2	SP400 to HLD117NN adapter plate kit

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to fit the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; please contact Prior Scientific if the nosepiece uses an alternative thread size. Some TE2000 nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. These spacers are also used to ensure any other objectives are parfocal. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior Scientific/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-INV-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-INV-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H2975 combination is required to drive the fine focus knob of the microscope. The coarse focus will not be motorized. The H122KN2K direct coupling can be added for more precise motorized control.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H2193	Nikon TE2000 focus sleeve
H122KN2K	Direct coupling kit, focus drive assembly

Illumination

The L200NI and L200SNI are recommended for fluorescence microscopy, [see datasheet for details](#). The L200SNI has a built-in shutter mechanism that can be controlled via a ProScan III controller, so a standalone shutter is not required.

Part	Description
L200SNI	L200 standard box, lamp, light guide, shutter and Nikon collimator
L200NI	L220 standard box, lamp, light guide and Nikon collimator
L220SNI	L220 standard box, lamp, light guide, shutter and Nikon collimator
L220NI	L220 standard box, lamp, light guide and Nikon collimator

Excitation path

Filter wheels are not supplied with filters. Contact Prior Scientific if you wish to purchase a filter wheel stand that can be fixed to an optical table. For systems requiring a shutter and filter wheel, buying one of the combinations listed above is recommended. The HF227 adapter is required for filter wheels and shutters in the main episcopic illumination pathway.

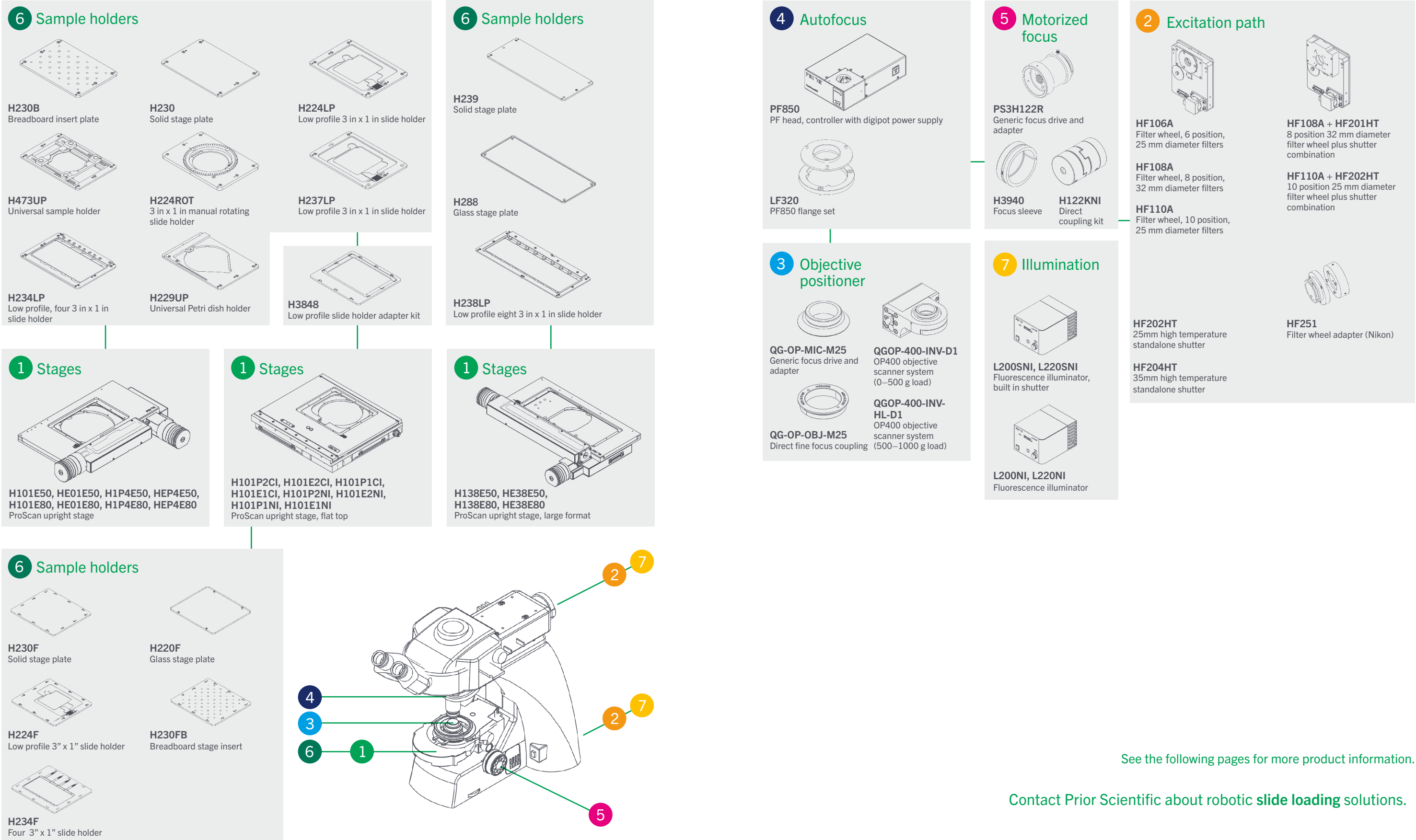
Part	Description
HF227	Filter wheel adapter (Nikon)
HF202HT	25 mm high temperature standalone shutter
HF204HT	35 mm high temperature standalone shutter
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

Emission path

The HF255 adapter is required for fitting shutter and filter wheels to the emission port of the microscope. 32 mm shutters and filter wheels are recommended for widefield applications.

Part	Description
HF227	Filter wheel adapter for Nikon Eclipse TE2000 series microscopes.
HF202HT	25mm high temperature standalone shutter
HF204HT	High speed shutter (high temperature), 32 mm aperture, for stand alone use
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination

Nikon Ni configuration chart



Nikon Ni configuration guide

The Nikon Ni is an upright microscope with three variants; Ni-E (focusing stage type), Ni-E (focusing nosepiece type), Ni-L and Ni-U. The below information refers only to the Ni-E (focusing stage type), Ni-L and Ni-U. Please refer to the following section for the Ni-E (focusing nosepiece type). Prior Scientific offers an extensive range of upgrades for this microscope.

Motorized XY stages and sample holders

Many stages are compatible with the Ni-E (focusing stage type) and Ni-U. Stages with the suffix –E80 and –NI are compatible with the Ni-E (focusing stage type) and with the Ni-L/Ni-U when fitted with a Nikon SSR substage. Stages with the suffix –E50 and –CI are compatible with the Ni-L/Ni-U when fitted with a Nikon SS substage only. All the sample holders listed in the first section of the above table are compatible with the H101E50, HE01E50, H1P4E50, HEP4E50, H101E80, HE01E80, H1P4E80, and HEP4E80. All the sample holders listed in the third section are compatible with the flat top H101P2CI, H101E2CI, H101P1CI H101E1CI, H101P2NI, H101E2NI, H101P1NI, and H101E1NI. In addition, sample holders from the first section are compatible with the flat top stage range when combined with the H3848. The large-format H138E50, HE38E50, H138E80, and HE38E80 can support up to eight slides.

Part	Description
H101E50	ProScan upright stage, part encoded, 2 mm pitch, 200 step, Nikon SS substage
HE01E50	ProScan upright stage, encoded, 2 mm pitch, 200 step, Nikon SS substage
H1P4E50	ProScan upright stage, part encoded, 1 mm pitch, 400 step, Nikon SS substage
HEP4E50	ProScan upright stage, encoded, 1 mm pitch, 400 step, Nikon SS substage
H101E80	ProScan upright stage, part encoded, 2 mm pitch, 200 step, Nikon SSR substage
HE01E80	ProScan upright stage, encoded, 2 mm pitch, 200 step, Nikon SSR substage
H1P4E80	ProScan upright stage, part encoded, 1 mm pitch, 400 step, Nikon SSR substage
HEP4E80	ProScan upright stage, encoded, 1 mm pitch, 400 step, Nikon SSR substage
H473UP	Universal sample holder (slides, Petri dishes, small flasks), upright
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy

Large Format XY motorized stages and sample holders

Part	Description
H138E50	ProScan upright stage, part encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SS substage
HE38E50	ProScan upright stage, encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SS substage
H138E80	ProScan upright stage, part encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SSR substage
HE38E80	ProScan upright stage, encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SSR substage
H238LP	Low profile eight 3 in x 1 in slide holder
H238PLP	Low profile eight 3 in x 1 in slide holder, part recessed
H239	Solid stage plate, H138 stages
H288	Glass stage plate, H138 stages

Flat top XY motorized stages and sample holders

Part	Description
H101P2CI	Proscan upright stage, flat top, 2 mm pitch, 200 step, Nikon SS substage
H101E2CI	Proscan upright stage, flat top, encoded, 2 mm pitch, 200 step, Nikon SS substage
H101P1CI	Proscan upright stage, flat top, 1 mm pitch, 200 step, Nikon SS substage
H101E1CI	Proscan upright stage, flat top, encoded, 1 mm pitch, 200 step, Nikon SS substage
H101P2NI	Proscan upright stage, flat top, 2 mm pitch, 200 step, Nikon SSR substage
H101E2NI	Proscan upright stage, flat top, encoded, 2 mm pitch, 200 step, Nikon SSR substage
H101P1NI	Proscan upright stage, flat top, 1 mm pitch, 200 step, Nikon SSR substage
H101E1NI	Proscan upright stage, flat top, encoded, 1 mm pitch, 200 step, Nikon SSR substage
H3848	Low profile slide holder adapter kit for H101F
H230F	Solid stage plate, H101F stages
H224F	Low profile 3 in x 1 in slide holder, extended, H101F stages
H234F	Four 3 in x 1 in slide holder, H101F stages
H220F	Glass stage plate, H101F stages
H230FB	Breadboard stage insert assembly (H101F)

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to fit the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; please contact Prior Scientific if the nosepiece uses an alternative thread size. Some Ni nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H3940 combination is required to drive the fine focus knob of the Ni-L/Ni-U microscopes. The coarse focus will not be motorized. The H122KNI direct coupling can be added for more precise motorized control. The Ni-E (focusing stage type) contains an inherent motorized focus, so no Prior Scientific focus motor is required unless using the PF850 autofocus.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H3940	Nikon Ni-U/Ni-C focus sleeve.
H122KNI	Direct fine focus coupling kit for Nikon 50i / 80i / 90i.

Autofocus

The PF850 is standalone hardware autofocus. The PF850 should be mounted between the objective and filter turret for fluorecence imaging. The PF200, PF209, and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems. Please note that the Ni-E inherent motorized focus cannot be used with the PF850 and that the PF850 should only be used with piezo focusing devices on the Ni-E. The PF850 is not compatible with the Ni-E.

Part	Description
PF850	PF head, controller with digipot power supply, cables
LF320	PF850 flange set (Nikon)
PF209	PureFocus setup sample slide
PF201	PureFocus setup camera alignment target type 2, DIA 25 x 0.75
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Illumination

The L200NI and L200SNI are recommended for fluorescence microscopy, [see datasheet for details](#). Note that the L200SNI has a built-in shutter mechanism that can be controlled via a ProScan III controller, so a standalone shutter is not required. The L220NI and L220SNI are available for customers doing fluorecence imaging in the far-red. The L200 and L220 systems can be fitted to the NI-FLEI episcopic attachment or other attachments that take 9 mm diameter liquid light guides.

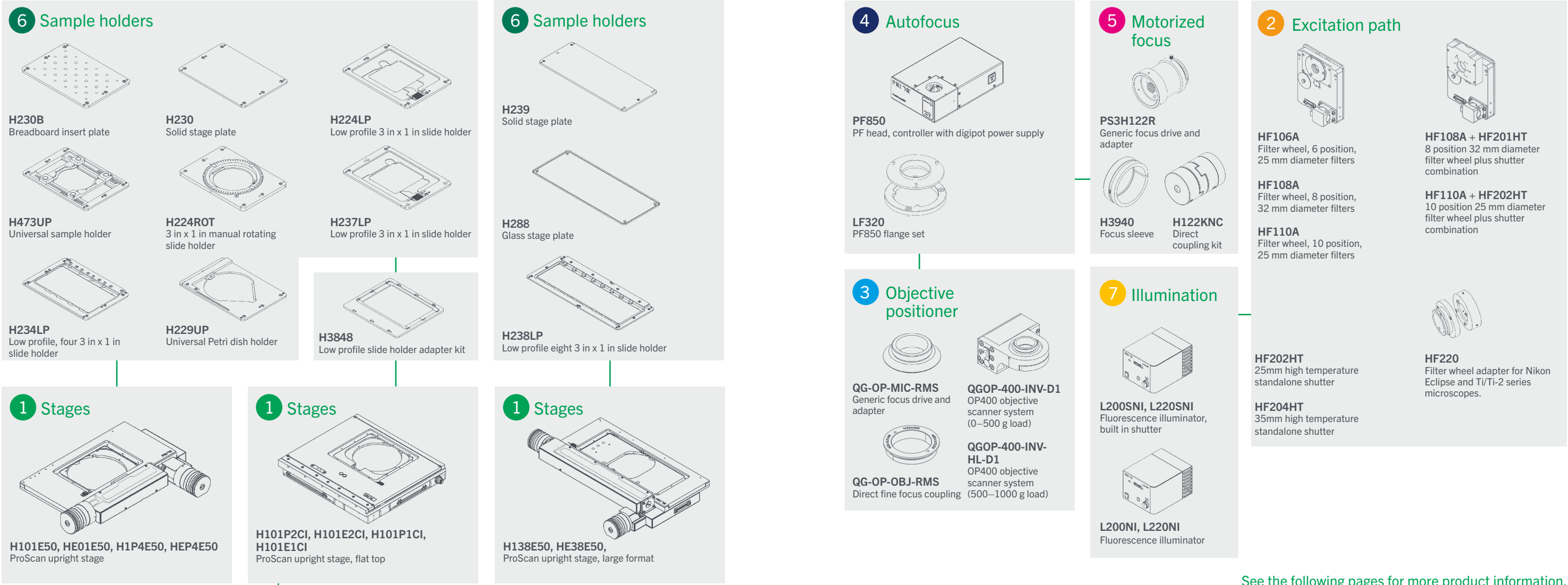
Part	Description
L200SNI	L200 standard box, lamp, light guide, shutter and Nikon collimator
L200NI	L220 standard box, lamp, light guide and Nikon collimator
L220SNI	L220 standard box, lamp, light guide, shutter and Nikon collimator
L220NI	L220 standard box, lamp, light guide and Nikon collimator

Excitation path

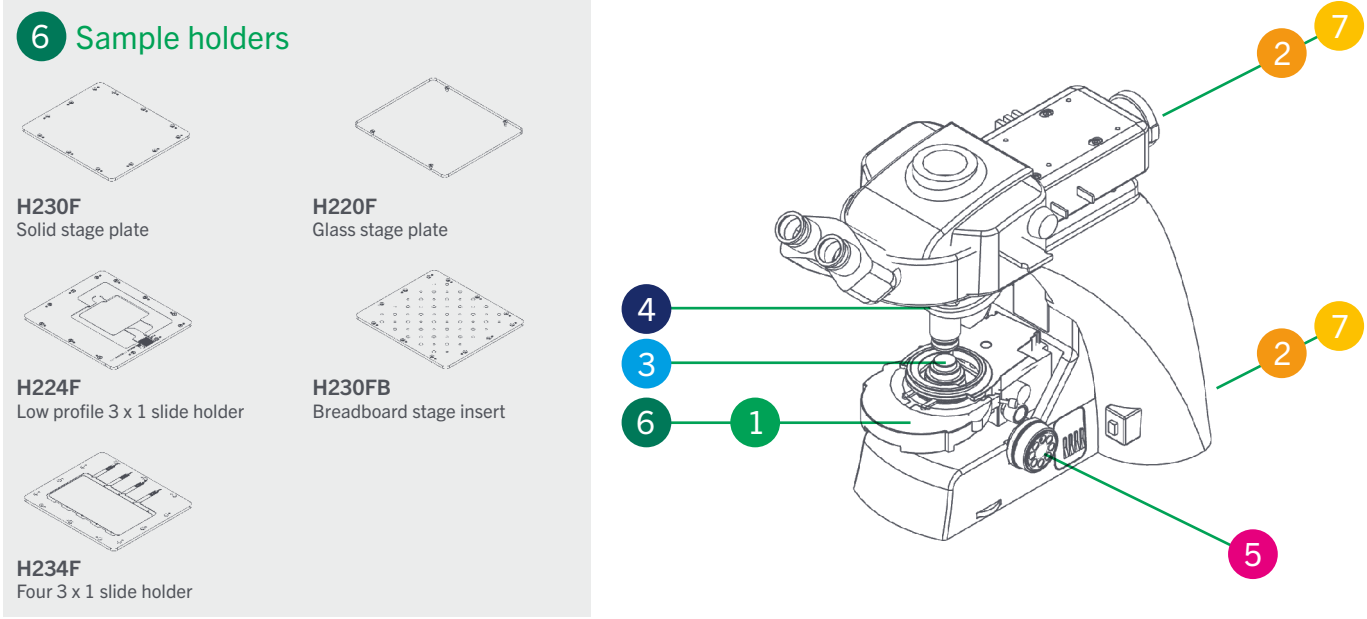
Filter wheels are not supplied with filters. Contact Prior Scientific if you wish to purchase a filter wheel stand that can be fixed to an optical table. For systems requiring a shutter and filter wheel, it is recommended to buy one of the combinations listed above. The HF220 adapter is needed for filter wheels and shutters in the episcopic path (via the NI-FLEI episcopic attachment). Excitation accessories are not compatible with the NI-FLEI-2 epifluorescence attachment.

Part	Description
HF220	Filter wheel adapter (Nikon)
HF202HT	25 mm high temperature standalone shutter
HF204HT	35 mm high temperature standalone shutter
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

Nikon Ci configuration chart



See the following pages for more product information.



Contact Prior Scientific about robotic slide loading solutions.

Nikon Ci configuration guide

The Nikon Ci is an upright microscope with three variants: Ci-E (motorized), Ci-L (manual, LED illumination), and Ci-U (manual, halogen illumination). Prior Scientific offers an extensive range of upgrades for this microscope.

Motorized XY stages and sample holders

Stages with the suffix –E50 and –CI are compatible with all Ci models when fitted with a Nikon SS substage. Please contact Prior if you have a Ci fitted with an SSR substage. All the sample holders listed in the first section of the above table are compatible with the H101E50, HE01E50, H1P4E50, and HEP4E50. All the sample holders listed in the second section are compatible with the flat top H101P2CI, H101E2CI, H101P1CI, and H101E1CI. In addition, sample holders from the first section are compatible with the flat top stage range when combined with the H3848. The large-format H138E50 and HE38BE50 can support up to 8 slides.

Part	Description
H101E50	ProScan upright stage, part encoded, 2 mm pitch, 200 step, Nikon SS substage
HE01E50	ProScan upright stage, encoded, 2 mm pitch, 200 step, Nikon SS substage
H1P4E50	ProScan upright stage, part encoded, 1 mm pitch, 400 step, Nikon SS substage
HEP4E50	ProScan upright stage, encoded, 1 mm pitch, 400 step, Nikon SS substage
H473UP	Universal sample holder (slides, Petri dishes, small flasks), upright
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy

Large format XY motorized stages and sample holders

Part	Description
H138E50	ProScan upright stage, part encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SS substage
HE38E50	ProScan upright stage, encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SS substage
H238LP	Low profile eight 3 in x 1 in slide holder
H238PLP	Low profile eight 3 in x 1 in slide holder, part recessed
H239	Solid stage plate, H138 stages
H288	Glass stage plate, H138 stages

Flat top XY motorized stages and sample holders

Part	Description
H101P2CI	Proscan upright stage, flat top, 2 mm pitch, 200 step, Nikon SS substage
H101E2CI	Proscan upright stage, flat top, encoded, 2 mm pitch, 200 step, Nikon SS substage
H101P1CI	Proscan upright stage, flat top, 1 mm pitch, 200 step, Nikon SS substage
H101E1CI	Proscan upright stage, flat top, encoded, 1 mm pitch, 200 step, Nikon SS substage
H3848	Low profile slide holder adapter kit for H101F
H230F	Solid stage plate, H101F stages
H224F	Low profile 3 in x 1 in slide holder, extended, H101F stages
H234F	Four 3 in x 1 in slide holder, H101F stages
H220F	Glass stage plate, H101F stages
H230FB	Breadboard stage insert assembly (H101F)

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter in order to be fitted to the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; please contact Prior Scientific if the nosepiece uses an alternative thread size. Some Ci nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H3940 combination is required to drive the fine focus knob of the Ci microscope series. The coarse focus will not be motorized. The H122KNC direct coupling can be added for more precise motorized control.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H3940	Nikon Ni-U/Ni-C focus sleeve.
H122KNC	Direct fine focus coupling kit for Nikon Ci.

Autofocus

The PF850 is standalone hardware autofocus. The PF850 should be mounted between the objective and filter turret for fluorecence imaging. The PF200, PF209, and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems.

Part	Description
PF850	PF head, controller with digipot power supply, cables
LF320	PF850 flange set (Nikon)
PF209	PureFocus setup sample slide
PF201	PureFocus setup camera alignment target type 2, DIA 25 x 0.75
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Illumination

The L200NI and L200SNI are recommended for fluorescence microscopy, [see datasheet for details](#). Note that the L200SNI has a built-in shutter mechanism that can be controlled via a ProScan III controller, so a standalone shutter is not required. The L220NI and L220SNI are available for customers doing fluorescence imaging in the far-red. The L200 and L220 systems can be fitted to the CI-FL episcopic attachment.

Part	Description
L200SNI	L200 standard box, lamp, light guide, shutter and Nikon collimator
L200NI	L220 standard box, lamp, light guide and Nikon collimator
L220SNI	L220 standard box, lamp, light guide, shutter and Nikon collimator
L220NI	L220 standard box, lamp, light guide and Nikon collimator

Excitation path

Filter wheels are not supplied with filters. Contact Prior Scientific if you wish to purchase a filter wheel stand that can be fixed to an optical table. For systems requiring a shutter and filter wheel, it is recommended to buy one of the combinations listed above. The HF220 adapter is required for filter wheels and shutters in the episcopic (via the CI-FL episcopic attachment). 35mm shutters and 32mm filter wheels are recommended for high field number microscope configurations.

Part	Description
HF220	Filter wheel adapter (Nikon)
HF202HT	25 mm high temperature standalone shutter
HF204HT	35 mm high temperature standalone shutter
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

Nikon FN1 configuration chart

6 Sample holders

H230B
Breadboard insert plate

H230
Solid stage plate

H224LP
Low profile 3 in x 1 in slide holder

H473UP
Universal sample holder

H224ROT
3 in x 1 in manual rotating slide holder

H237LP
Low profile 3 in x 1 in slide holder

H229UP
Universal Petri dish holder

H234LP
Low profile, four 3 in x 1 in slide holder

1 Stages

ZDN12MP, ZDN12ME, ZDN12MK, ZDN12MF
ZDeck stages

3 Objective positioner

QG-OP-MIC-M25
Generic focus drive and adapter

QG-OP-400-INV-D1
OP400 objective scanner system (0–500 g load)

QG-OP-400-INV-HL-D1
OP400 objective scanner system (500–1000 g load)

QG-OP-OBJ-M25
Direct fine focus coupling

5 Motorized focus

PS3H122R
Generic focus drive and adapter

H550
Focus sleeve

9 Nanopositioning sample holders

QGSP302XR
SP universal sample holder XR

QGSP303XR
Slide holder

QGSP301XR
SP multiwell holder XR

7 Illumination

L200SNI, L220SNI
Fluorescence illuminator, built in shutter

L200NI, L220NI
Fluorescence illuminator

2 Excitation path

HF106A
Filter wheel, 6 position, 25 mm diameter filters

HF108A
Filter wheel, 8 position, 32 mm diameter filters

HF110A
Filter wheel, 10 position, 25 mm diameter filters

HF202HT
25mm high temperature standalone shutter

HF204HT
35mm high temperature standalone shutter

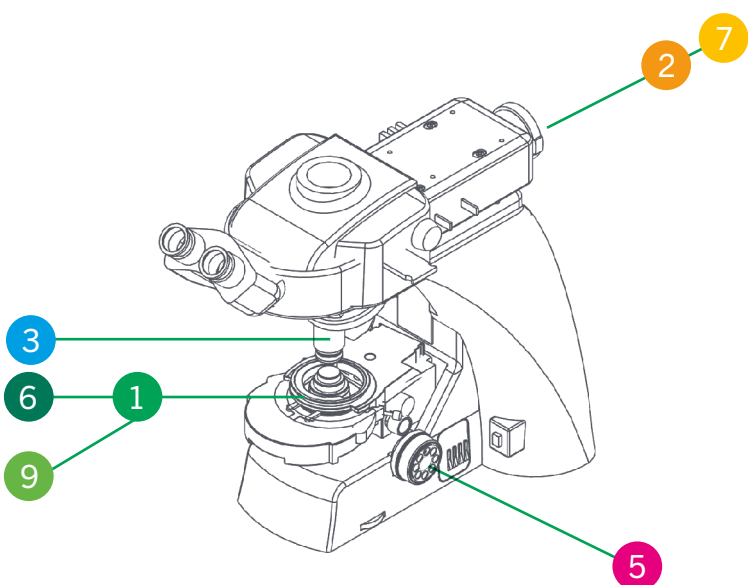
HF108A + HF201HT
8 position 32 mm diameter filter wheel plus shutter combination

HF110A + HF202HT
10 position 25 mm diameter filter wheel plus shutter combination

HF220
Filter wheel adapter (Nikon)

9 Nanopositioning stages

QGSP400-D1
QGSP600-D1
QGSP800-D1



See the following pages for more product information.

Nikon FN1 configuration guide

The Nikon FN1 is a manual microscope designed for electrophysiology. Prior Scientific can motorize many aspects of this microscope.

Motorized XY stages and sample holders

All the sample holders listed in the second section are compatible with the ZDN12MP, ZDN12ME, ZDN12MK, and ZDN12MF. The Zdeck systems are supplied with a H31XYZE/V31XYZE controller and CS200 joystick (-MK and -MF variant is not motorized, so no controller or joystick are supplied), an adapter for the sample holders, an H473 universal sample holder, and a Nikon 108 mm ring insert.

ZDeck stages and sample holders

Part	Description
ZDN12MP	ZDeck, Nikon, 2 mm pitch, 200 step, motorized
ZDN12ME	ZDeck, Nikon, 2 mm pitch, 200 step, motorized, encoded
ZDN12MK	Manual ZDeck, Nikon
ZDN12MF	ZDeck, Nikon, fixed
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy

Nanopositioning stages and sample holders

Nanopositioning stages require a suitable motorized stage for mounting. All Prior motorized stages listed in this guide are compatible. Please get in touch with Prior Scientific if the microscope has another brand of the motorized stage. Note that a sample holder from the nanopositioning stage section is required for use and replaces the sample holder fitted to the motorized stage. Please discuss the use of a nanopositioning stage with Prior Scientific when placing your order if using a rotary nosepiece.

Part	Description
QGSP400-D1	System SP400, 400 µm travel, and NPC-D-6110 controller
QGSP600-D1	System SP600, 600 µm travel, and NPC-D-6110 controller
QGSP800-D1	System SP800, 800 µm travel, and NPC-D-6110 controller
QGSP301XR	SP multiwell holder XR
QGSP302XR	SP universal sample holder XR
QGSP303XR	SP single slide holder suitable for 1 in x3 in and 2 in x3 in slides

Objective positioners

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to be fitted to the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; please contact Prior Scientific if the nosepiece uses an alternative thread size. Some FN1 nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. Please specify the nosepiece attachment fitted to the microscope when ordering. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Control of the via Nikon Software requires using the Nikon Realtime Controller.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H550 combination is required to drive the fine focus knob of the microscope. The coarse focus will not be motorized. Prior Scientific offers a specific kit (NIKFN1EK) for mounting an encoder probe (H393) into the microscope if the encoding is required. Enquire with the regional Prior Scientific office for the best way to purchase this configuration.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H550	Focus adapter (Prior/Swift)

Illumination

The L200NI and L200SNI are recommended for fluorescence microscopy, [see datasheet for details](#). Note that the L200SNI has a built-in shutter mechanism that can be controlled via a ProScan III controller, so a standalone shutter is not required. The L220NI and L220SNI are available for customers doing fluorescence imaging in the far-red.

Part	Description
L200SNI	L200 standard box, lamp, light guide, shutter and Nikon collimator
L200NI	L220 standard box, lamp, light guide and Nikon collimator
L220SNI	L220 standard box, lamp, light guide, shutter and Nikon collimator
L220NI	L220 standard box, lamp, light guide and Nikon collimator

Excitation path

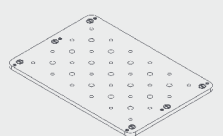
Filter wheels are not supplied with filters. Contact Prior Scientific if you wish to purchase a filter wheel stand that can be fixed to an optical table. For systems requiring a shutter and filter wheel, it is recommended to buy one of the combinations listed above. The HF220 adapter is required for filter wheels and shutters in the episcopic illumination pathway. Excitation path components require the NI-FLEI or CI-FL epifluorescence units. Shutters and filter wheels cannot be added to the diascope illumination pathway.

Part	Description
HF220	Filter wheel adapter (Nikon)
HF202HT	25 mm high temperature standalone shutter
HF204HT	35 mm high temperature standalone shutter
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

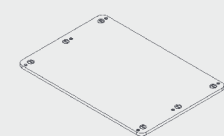
Nikon Ni (focusing nosepiece) configuration chart

See the following pages for more product information.

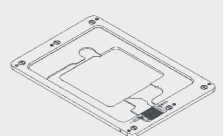
6 Sample holders



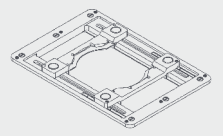
H230B
Breadboard insert plate



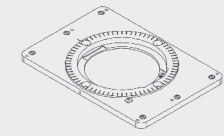
H230
Solid stage plate



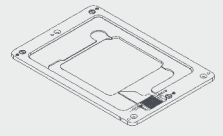
H224LP
Low profile 3 in x 1 in slide holder



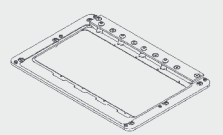
H473UP
Universal sample holder



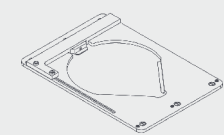
H224ROT
3 in x 1 in manual rotating slide holder



H237LP
Low profile 3 in x 1 in slide holder

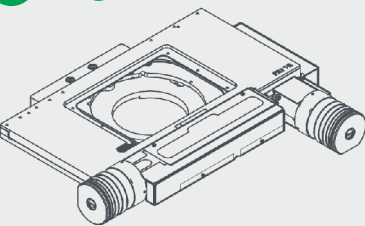


H234LP
Low profile, four 3 in x 1 in slide holder

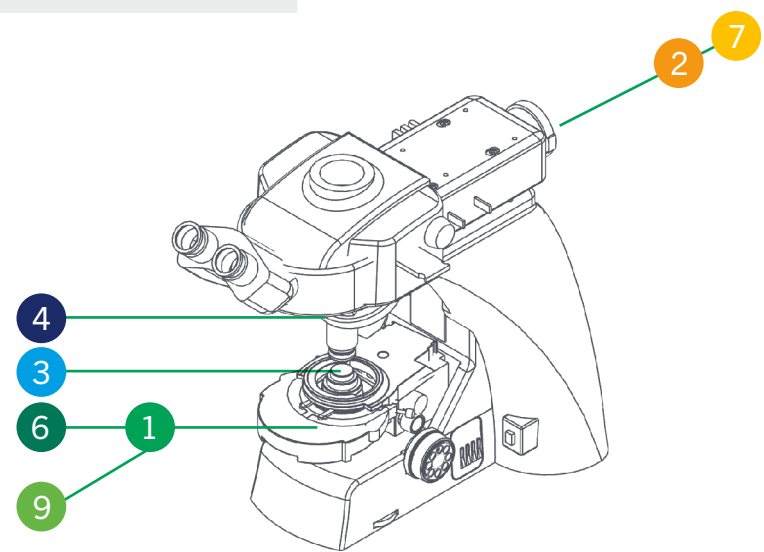


H229UP
Universal Petri dish holder


1 Stages



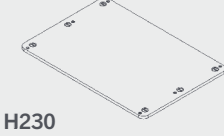
H101NFN
ProScan Stage



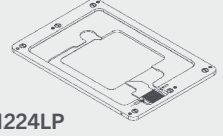
6 Sample holders



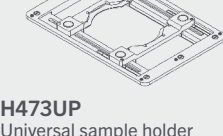
H230B
Breadboard insert plate



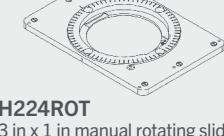
H230
Solid stage plate




H224LP
Low profile 3 in x 1 in slide holder




H473UP
Universal sample holder




H224ROT
3 in x 1 in manual rotating slide holder



H237LP
Low profile 3 in x 1 in slide holder

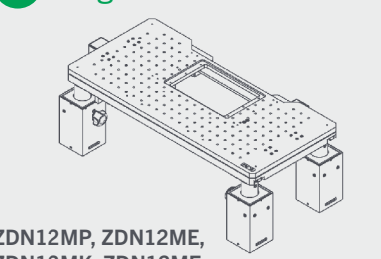


H229UP
Universal Petri dish holder



H234LP
Low profile, four 3 in x 1 in slide holder

1 Stages



ZDN12MP, ZDN12ME, ZDN12MK, ZDN12MF
ZDeck stages

3 Objective positioner



QG-OP-MIC-M25
Generic focus drive and adapter



QG-OP-OBJ-M25
Direct fine focus coupling

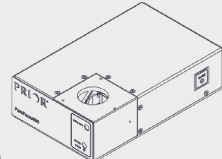


QGOP-400-INV-D1
OP400 objective scanner system (0–500 g load)




QGOP-400-INV-HL-D1
OP400 objective scanner system (500–1000 g load)

4 Autofocus



PF850
PF head, controller with digipot power supply



LF320
PF850 flange set

9 Nanopositioning sample holders



QGSP302XR
SP universal sample holder XR

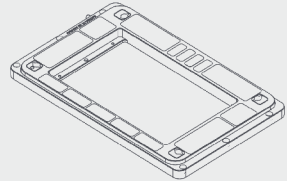


QGSP303XR
Slide holder



QGSP301XR
SP multiwell holder XR

9 Nanopositioning stages



QGSP400-D1, QGSP600-D1, QGSP800-D1

7 Illumination

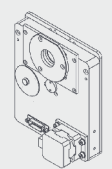


L200SNI, L220SNI
Fluorescence illuminator, built in shutter




L200NI, L220NI
Fluorescence illuminator

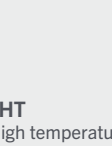
2 Excitation path



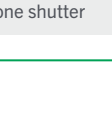
HF106A
Filter wheel, 6 position, 25 mm diameter filters



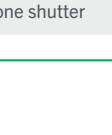
HF108A
Filter wheel, 8 position, 32 mm diameter filters



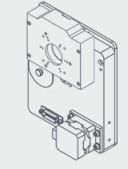
HF110A
Filter wheel, 10 position, 25 mm diameter filters



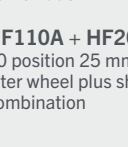
HF202HT
25mm high temperature standalone shutter




HF204HT
35mm high temperature standalone shutter



HF108A + HF201HT
8 position 32 mm diameter filter wheel plus shutter combination



HF110A + HF202HT
10 position 25 mm diameter filter wheel plus shutter combination



HF220
Filter wheel adapter (Nikon)

Nikon Ni (focusing nosepiece) configuration guide

The Nikon FN1 is a manual microscope designed for electrophysiology. Prior Scientific can motorize many aspects of this microscope.

Motorized XY stages and sample holders

All the sample holders listed in the first section of the above table are compatible with the H101NFN, which includes an adapter plate specific to the FN1 microscope. All the sample holders listed in the second section are compatible with the ZDN12MP, ZDN12ME, ZDN12MK, and ZDN12MF. The ZDeck systems are supplied with a H31XYZE / V31XYZE controller and CS200 joystick (-MK and -MF variants are not motorized, so no controller or joystick are supplied), an adapter for the sample holders, an H473 universal sample holder, and a Nikon 108 mm ring insert.

Part	Description
H101NFN	H101A stage, Nikon FN1
H473UP	Universal sample holder (slides, Petri dishes, small flasks), upright
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy

ZDeck stages and sample holders

Part	Description
ZDN12MP	ZDeck, Nikon, 2 mm pitch, 200 step, motorized
ZDN12ME	ZDeck, Nikon, 2 mm pitch, 200 step, motorized, encoded
ZDN12MK	Manual ZDeck, Nikon
ZDN12MF	ZDeck, Nikon, fixed
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy

Nanopositioning stages and sample holders

Nanopositioning stages require a suitable motorized stage for mounting. All Prior motorized stages listed in this guide are compatible. Please get in touch with Prior Scientific if the microscope has another brand of the motorized stage. Note that a sample holder from the nanopositioning stage section is required for use and replaces the sample holder fitted to the motorized stage. Please discuss the use of a nanopositioning stage with Prior Scientific when placing your order if using a rotary nosepiece.

Part	Description
QGSP400-D1	System SP400, 400 μm travel, and NPC-D-6110 controller
QGSP600-D1	System SP600, 600 μm travel, and NPC-D-6110 controller
QGSP800-D1	System SP800, 800 μm travel, and NPC-D-6110 controller
QGSP301XR	SP multiwell holder XR
QGSP302XR	SP universal sample holder XR
QGSP303XR	SP single slide holder suitable for 1 in x 3 in and 2 in x3 in slides

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to be fitted to the microscope nosepiece and the microscope objective. Nikon microscopes typically use M25 threads; please contact Prior Scientific if the nosepiece uses an alternative thread size. Some FN1 nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. Please specify the nosepiece attachment fitted to the microscope when ordering. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Control of the via Nikon Software requires using the Nikon Realtime Controller.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective

Illumination

The L200NI and L200SNI are recommended for fluorescence microscopy, [see datasheet for details](#). Note that the L200SNI has a built-in shutter mechanism that can be controlled via a ProScan III controller, so a standalone shutter is not required. The L220NI and L220SNI are available for customers doing fluorescence imaging in the far-red. The L200 and L220 systems can be fitted to the NI-FLEI episcopic attachment.

Part	Description
L200SNI	L200 standard box, lamp, light guide, shutter and Nikon collimator
L200NI	L220 standard box, lamp, light guide and Nikon collimator
L220SNI	L220 standard box, lamp, light guide, shutter and Nikon collimator
L220NI	L220 standard box, lamp, light guide and Nikon collimator

Excitation path

Filter wheels are not supplied with filters. Contact Prior Scientific if you wish to purchase a filter wheel stand that can be fixed to an optical table. For systems requiring a shutter and filter wheel, it is recommended to buy one of the combinations listed above. The HF220 adapter is required for filter wheels and shutters in the episcopic illumination pathway. Addition of excitation path components requires the NI-FLEI epifluorescence attachment. Shutters and filter wheels cannot be added to the diascopeic illumination pathway.

Part	Description
HF220	Filter wheel adapter (Nikon)
HF202HT	25 mm high temperature standalone shutter
HF204HT	35 mm high temperature standalone shutter
HF110A	Filter wheel, 10 position, 25 mm diameter filters without stand
HF106A	Filter wheel, 6 position, 25 mm diameter filters without stand
HF108A	Filter wheel, 8 position, 32 mm diameter filters without stand
HF110A + HF200HT	10 position 25 mm diameter filter wheel plus shutter combination
HF108A + HF201HT	8 position 32 mm diameter filter wheel plus shutter combination

Nikon LV100/LV150 configuration guide

The Nikon LV100 and LV150 models are industrial microscopes under the LV-N product line. The LV150N, LV150NL and LV100ND are non-motorized, whereas the LV150NA and LV100NDA are motorized. Base motorization is focused on optics, and Prior Scientific can offer many motorization options for all systems.

Motorized XY stages and sample holders

A large number of stages are compatible with the LV100 and LV150 microscopes. All the sample holders listed in the first section of the above table are compatible with the H101NLV, HE01NLV, H1P4NLV, and HEP4NLV. All the sample holders listed in the second section are compatible with the flat top H101P2NLV, H101E2NLV, H101P1NLV, and H101E1NLV. In addition, sample holders from the first section are compatible with the flat top stage range when combined with the H3848. Flat top stages are recommended for ease of sample loading. The large-format H138NLV and HE38NLV can support up to 8 slides. The H105NL/2 offers up to 6 in x 6 in travel range for semiconductor or other large sample scanning.

Part	Description
H101NLV	ProScan upright stage, part encoded, 2 mm pitch, 200 step, Nikon SS substage
HE01NLV	ProScan upright stage, encoded, 2 mm pitch, 200 step, Nikon SS substage
H1P4NLV	ProScan upright stage, part encoded, 1 mm pitch, 400 step, Nikon SS substage
HEPNLV	ProScan upright stage, encoded, 1 mm pitch, 400 step, Nikon SS substage
H473UP	Universal sample holder (slides, Petri dishes, small flasks), upright
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy

Large Format XY motorized stages and sample holders

Part	Description
H138NLV	ProScan upright stage, part encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SS substage
HE38NLV	ProScan upright stage, encoded, 2 mm pitch, 200 step, for up to 8 slides, Nikon SS substage
H238LP	Low profile eight 3 in x 1 in slide holder
H238PLP	Low profile eight 3 in x 1 in slide holder, part recessed
H239	Solid stage plate, H138 stages
H288	Glass stage plate, H138 stages

Flat top XY motorized stages and sample holders

Part	Description
H101P2NLV	Proscan upright stage, flat top, 2 mm pitch, 200 step, Nikon SS substage
H101E2NLV	Proscan upright stage, flat top, encoded, 2 mm pitch, 200 step, Nikon SS substage
H101P1NLV	Proscan upright stage, flat top, 1 mm pitch, 200 step, Nikon SS substage
H101E1NLV	Proscan upright stage, flat top, encoded, 1 mm pitch, 200 step, Nikon SS substage
H3848	Low profile slide holder adapter kit for H101F
H230F	Solid stage plate, H101F stages
H224F	Low profile 3 in x 1 in slide holder, extended, H101F stages
H234F	Four 3 in x 1 in slide holder, H101F stages
H220F	Glass stage plate, H101F stages
H230FB	Breadboard stage insert assembly (H101F)

Large format wafer scanning XY stages and sample holders

Part	Description
H105NL/2	H105NL stage, 2 mm pitch
H227NL	Glass stage plate, H105NL stages
H231NL	Solid stage plate, H105NL stages
HWC15SNL	Wafer chuck 4 in and 6 in wafers
HWC15VNL	Wafer chuck rot. and vac. 150 mm

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to fit the microscope nosepiece and the microscope objective. Nikon LV100 and LV150 microscopes use M25 or M32 threads depending on the nosepiece fitted. Some LV100 and LV150 nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15mm spacer can be added to clear the lip. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior Scientific/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500– 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-MIC-M32	OP microscope adapter M32 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective
QG-OP-SPACE-M32	M32 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H3909 combination is required to drive the fine focus knob of the LV100 and LV150 microscopes. The coarse focus will not be motorized.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H3909	Focus adapter (Nikon LV100)

Autofocus

The PF850 is standalone hardware autofocus. The PF850 should be mounted above the fluorescence turret in most cases. For fluorescence systems, please get in touch with Prior Scientific if the dichroics are known to block 850 nm wavelength light. The PF201, PF209, and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems. The PF850M is recommended for most semiconductor scanning applications. Discuss your samples with Prior Scientific before ordering.

Part	Description
PF850	PF head, controller with digipot power supply, cables
PF850M	PF head, controller with digipot power supply, cables
LF320	PF850 flange set (Nikon)
PF209	PureFocus setup sample slide
PF201	PureFocus setup camera kit type 2
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Nikon L200 configuration chart

1 Stages

H105/2NI, HE05/2
ProScan stage NI

H105N2F, H105E2F
ProScan stage

6 Sample holders

H227
Glass stage plate assembly

H231B
Breadboard stage insert assembly

H231
Aluminum stage plate assembly

HWC15V
Wafer chuck rot + vac 150 mm

H146
Wafer chuck, 150 mm sprung

H143
Wafer chuck spring loaded 3 in

H2100
Stage spacer

HWC15S
Wafer chuck (4 in & 6 in wafers)

3 Objective positioner

QG-OP-MIC-M25
QG-OP-MIC-M32
Microscope adapter

QG-OP-OBJ-M25
Objective adapter

QGOP-400-INV-D1
OP400 objective scanner system (0–500 g load)

QGOP-400-INV-HL-D1
OP400 objective scanner system (500–1000 g load)

4 Autofocus

PF850
PF head, controller with digipot power supply

LF320
PF850 flange set

5 Motorized focus

PS3H122R
Generic focus drive and adapter

H3909
Focus sleeve

1 Stages

H116/2-8, HE16/2-8
ProScan stage for up to 8 inch diameter wafers

H2100
Stage spacer

6 Sample holders

H225
Glass stage plate assembly

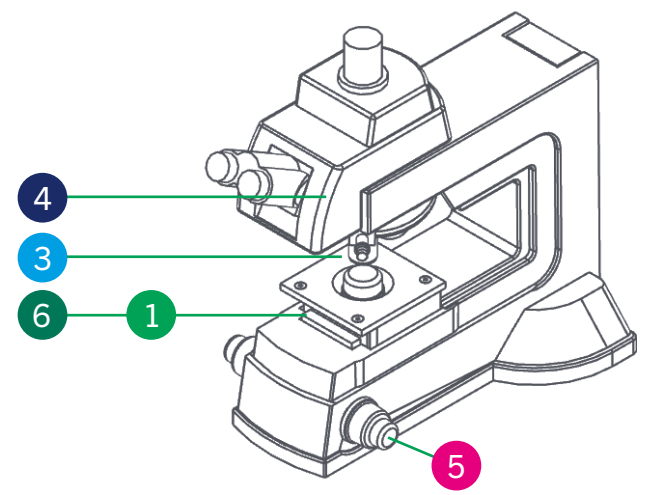
HWC20S
Wafer chuck, rotating

H149, H149N
Wafer chuck

H232
Aluminum stage plate assembly

HWC20V
Wafer chuck, rotating, vacuum

H232B
Breadboard stage insert



Nikon L200 configuration guide

The Nikon L200 industrial microscope is designed primarily for 8-inch wafer scanning. The L200N uses episcopic illumination, and the L200ND uses episcopic and diascope illumination. Neither model is motorized. Prior Scientific can offer several motorization options for both systems.

Motorized XY stages and sample holders

The H116/2-8 and HE16/2-8 are the largest format stages available for the L200 systems and offer up to 10 in x 8 in on travel. Contact Prior Scientific if using a 100x objective with the HE16/2-8 as this may restrict the available travel range depending on the chosen sample holder. The H105/2NI, HE05/2NI, H105N2F, and H105E2F are also available for smaller wafers. All stages require the H2100 adapter plate. The H105N2F and H105E2F feature a flat top design for easy loading. The HWC20V and HWC15V are fitted with a vacuum nozzle, but no vacuum pump system is supplied. Other smaller stages from Prior are compatible with the L200; please get in touch with Prior Scientific to learn more. The H2100 adapter is required when using non-wafer chuck sample holders. Prior Scientific can also supply stages with dedicated vacuum shuttle systems compatible with Nikon wafer loading systems e.g., NWL200.

Part	Description
H105/2NI	ProScan stage, 154 x 154 mm travel, part encoded, 2 mm pitch, 200 step, Nikon
HE05/2NI	ProScan stage, 154 x 154 mm travel, encoded, 2mm Pitch, 200 step, Nikon
H105N2F	ProScan stage, 154 x 154 mm travel, non-encoded, 2 mm pitch, 200 step, Nikon
H105E2F	ProScan stage, 154x 154 mm travel, encoded, 2 mm pitch, 200 step, Nikon
H2100	Stage spacer (H105/116 to L200)
H227	H105 glass stage plate assembly
H231	H105 aluminum stage plate assembly
H231B	Breadboard stage insert assembly (H105)
H143	Wafer chuck spring loaded 3 in
H146	Wafer chuck, 150 mm sprung, H105 stages
HWC15S	H105 wafer chuck (4 in and 6 in wafers)
HWC15V	Wafer chuck rot + vac 150 mm/H105

Motorized XY stages and sample holders for up to 8 inch diameter wafers

Part	Description
H116/2-8	ProScan stage, 255 x 215 mm travel, part encoded, 2 mm pitch, 200 step, Nikon
HE16/2-8	ProScan stage, 255 x 215 mm travel, encoded, 2 mm pitch, 200 step, Nikon
H2100	Stage spacer (H105/116 to L200)
H225	Glass stage plate 8 in x 8 in assembly
H232	H116 aluminum stage plate assembly
H232B	Breadboard stage insert assembly (H116)
H149	Wafer Chuck, 200 mm sprung, H116 stages
H149N	Wafer chuck, 200 mm notched sprung, H116 stages
HWC20S	Wafer chuck, rotating, 150 mm/200mm, H116 stages
HWC20V	Wafer chuck, rotating, vacuum, 200 mm, H116 stages

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to be fitted to the microscope nosepiece and the microscope objective. Nikon L300 microscopes use M25 or M32 threads depending on the nosepiece fitted. Some L200 nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-MIC-M32	OP microscope adapter M32 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective
QG-OP-SPACE-M32	M32 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H3909 combination is required to drive the fine focus knob of the L200 microscope. The coarse focus will not be motorized.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H3909	Focus adapter (Nikon LV100)

Autofocus

The PF850 is standalone hardware autofocus. The PF850 should be mounted above the fluorescence turret in most cases. For fluorescence systems, please contact Prior Scientific if the dichroics are known to block 850 nm wavelength light. The PF201, PF209 and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems. The PF850M is recommended for most semiconductor scanning applications. Discuss your samples with Prior Scientific before ordering.

Part	Description
PF850	PF head, controller with digipot power supply, cables
PF850M	PF head, controller with digipot power supply, cables
LF320	PF850 flange set (Nikon)
PF209	PureFocus setup sample slide
PF200	PureFocus Setup camera alignment target type 1, RMS.DIA 0.8 x 36
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Nikon L300 configuration guide

The Nikon L300 industrial microscope is designed primarily for 12-inch wafer scanning. The L300N uses episcopic illumination, the L300ND uses episcopic and diascope illumination, and neither model is motorized. Prior Scientific can offer several motorization options for both systems.

Motorized XY stages and sample holders

The H112/2ST and HE12/2ST are the largest stages available for L300 microscopes and can support up to 12 in x 12 in travel wafers. The H116/2Ni and HE16/2Ni are also available systems and offer up to 10 in x 8 in travel for scanning smaller wafers. Contact Prior Scientific if using a 100x objective with the HE16/2NI or HE12/2NI as this may restrict the available travel range depending on the sample holder chosen. Contact Prior Scientific if using a H112/2ST or HE12/2ST with an L300ND as the condenser from the diascope pathway will clash with the stage. The H105/2NI, HE05/2NI, H105N2F, and H105E2F are also available for smaller wafers. When using a H105-type stage without a wafer chuck, the H2100 is required. The H105N2F and H105E2F feature a flat top design for easy loading. The HWC30V, HWC20V, and HWC15V are fitted with a vacuum nozzle, but no vacuum pump system is supplied. Other smaller stages from Prior are compatible with the L300; please get in touch with Prior Scientific to learn more. Prior Scientific can also provide stages with dedicated vacuum shuttle systems compatible with Nikon wafer loading systems for example.

Motorized XY stages and sample holders for up to 6 inch diameter wafers

Part	Description
H105/2NI	ProScan stage, 154 x 154 mm travel, part encoded, 2 mm pitch, 200 step, Nikon
HE05/2NI	ProScan stage, 154 x 154 mm travel, encoded, 2mm Pitch, 200 step, Nikon
H105N2F	ProScan stage, 154 x 154 mm travel, non-encoded, 2 mm pitch, 200 step, Nikon
H105E2FL	ProScan stage, 154x 154 mm travel, encoded, 2 mm pitch, 200 step, Nikon
H2100	Stage spacer (H105/116 to L200)
H227	H105 glass stage plate assembly
H231	H105 aluminum stage plate assembly
H231B	Breadboard stage insert assembly (H105)
H143	Wafer chuck spring loaded 3 in
H146	Wafer chuck, 150 mm sprung, H105 stages
HWC15S	H105 wafer chuck (4 in and 6 in wafers)
HWC15V	Wafer chuck rot + vac 150 mm/H105

Motorized XY stages and sample holders for up to 8 inch diameter wafers

Part	Description
H116/2NI	ProScan stage, 255 x 215 mm travel, part encoded, 2 mm pitch, 200 step, Nikon
HE16/2NI	ProScan stage, 255 x 215 mm travel, encoded, 2 mm pitch, 200 step, Nikon
H2100	Stage spacer (H105/116 to L200)
H225	Glass stage plate 8 in x 8 in assembly
H232	H116 aluminum stage plate assembly
H232B	Breadboard stage insert assembly (H116)
H149	Wafer Chuck, 200 mm sprung, H116 stages
H149N	Wafer chuck, 200 mm notched sprung, H116 stages
HWC20S	Wafer chuck, rotating, 150 mm/200mm, H116 stages
HWC20V	Wafer chuck, rotating, vacuum, 200 mm, H116 stages

Motorized XY stages and sample holders for up to 12 inch diameter wafers

Part	Description
H112/2ST	ProScan stage, 154 x 154 mm travel, part encoded, 2 mm pitch, 200 step, Nikon
HE12/ST	ProScan stage, 154 x 154 mm travel, encoded, 2 mm pitch, 200 step, Nikon
H221	Glass stage plate 12 in x 12 in assembly
H233	H112 aluminum stage plate assembly
H233B	Breadboard stage insert assembly (H112)
HWC30S	Wafer Chuck, 300D, (H112 stages)
HWC30V	Wafer chuck, rotating, vacuum, 300 mm, H112 stages

Objective positioners and adapters

When ordering, ensure the correct part number is used to specify inverted calibration. Objective positioners require a threaded adapter to be fitted to the microscope nosepiece and the microscope objective. Nikon L300 microscopes use M25 or M32 threads depending on the nosepiece fitted. Some L200 nosepieces have a raised lip surrounding the objective positions, which may clash with the objective positioner; a 15 mm spacer can be added to clear the lip. Please note that the two objective positions adjacent to the objective positioner will not be usable due to space constraints; additional positions may be unusable on smaller nosepieces. A high load calibration is available for specialist heavy objectives. Prior objective positioners can be controlled via NIS Elements by serial port connection. Alternative Prior Scientific/Queensgate manufactured objective positioners can also be purchased exclusively from Nikon.

Part	Description
QGOP-400-UP-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (0 – 500 g load)
QGOP-400-UP-HL-D1	OP400 objective scanner system incl. NPC-D-6110 controller for inverted microscopes (500 – 1000 g load)
QG-OP-MIC-M25	OP microscope adapter M25 x 0.75
QG-OP-MIC-M32	OP microscope adapter M32 x 0.75
QG-OP-OBJ-M25	OP objective adapter M32 x 0.75 to M25 x 0.75
QG-OP-SPACE-M25	M25 x 0.75 static objective spacer to align with OP-400 objective
QG-OP-SPACE-M32	M32 x 0.75 static objective spacer to align with OP-400 objective

Motorized focus

The PS3H122R plus H3909 combination is required to drive the fine focus knob of the L300 microscope. The coarse focus will not be motorized.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H3909	Focus adapter (Nikon LV100)

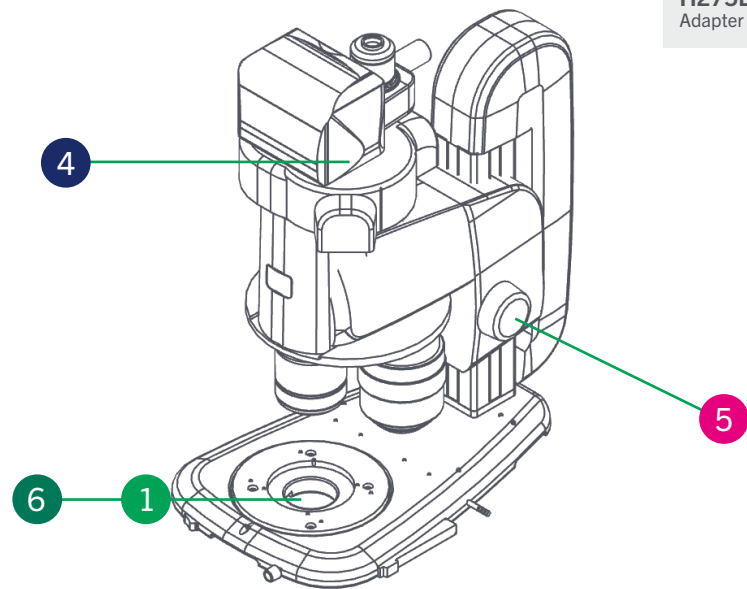
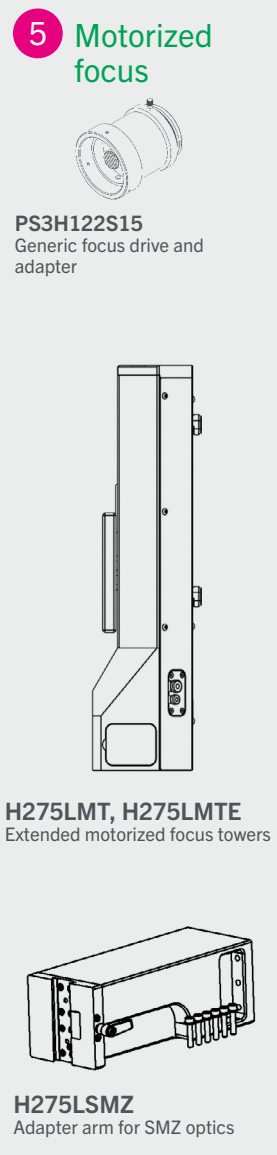
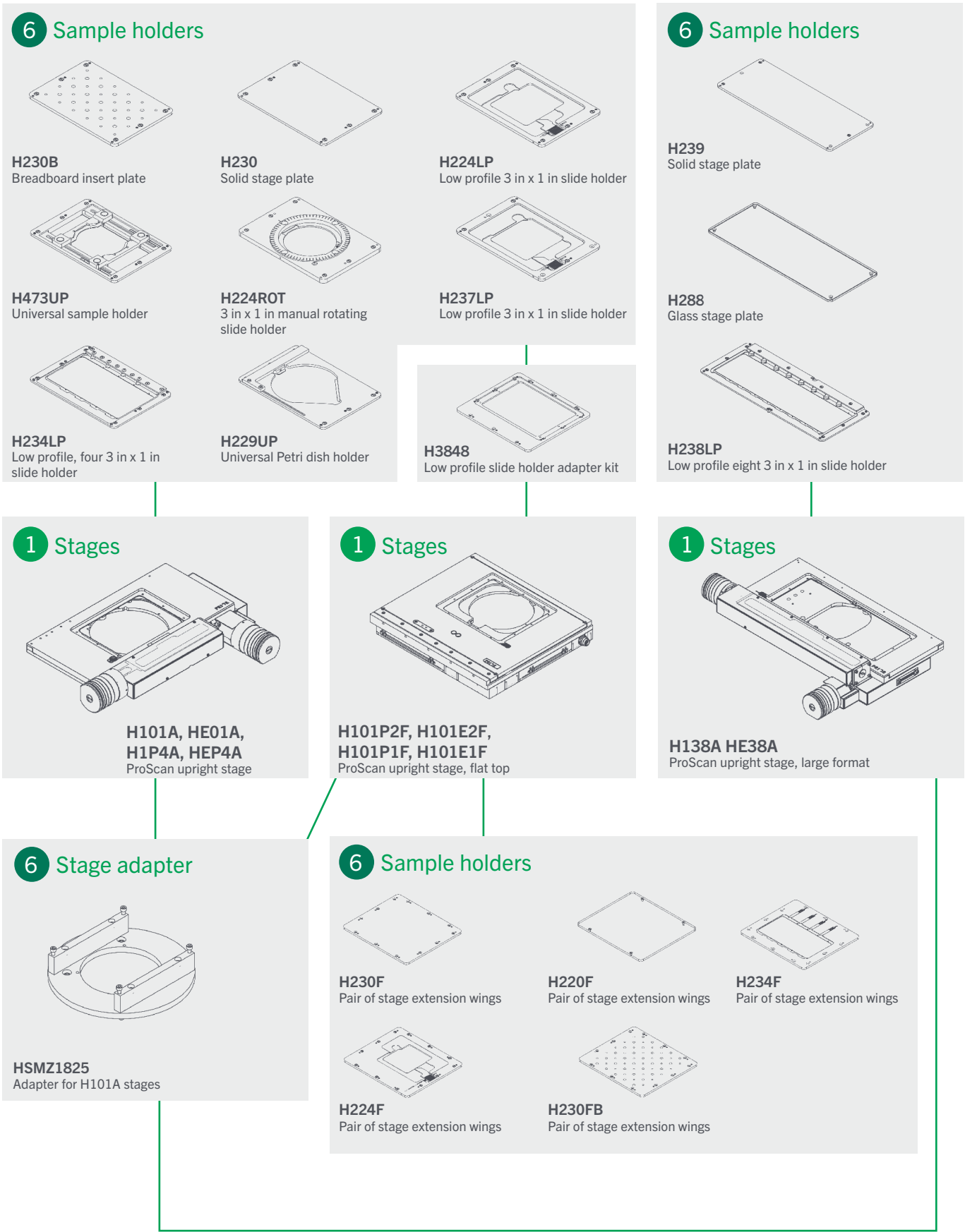
Autofocus

The PF850 is standalone hardware autofocus. The PF850 should be mounted above the fluorescence turret in most cases. For fluorescence systems, please contact Prior Scientific if the dichroics are known to block 850nm wavelength light. The PF201, PF209 and PF300 are required for setup and maintenance. The PF404 is required for use with piezo nanopositioning systems. The PF850M is recommended for most semiconductor scanning applications. Discuss your samples with Prior Scientific before ordering.

Part	Description
PF850	PF head, controller with digipot power supply, cables
PF850M	PF head, controller with digipot power supply, cables
LF320	PF850 flange set (Nikon)
PF209	PureFocus setup sample slide
PF200	PureFocus Setup camera alignment target type 1, RMS.DIA 0.8 x 36
PF300	PureFocus setup camera jig
PF404	Piezo cable for PF850 15D to BNC

Nikon SMZ18/25 configuration chart

See the following pages for more product information.



Nikon SMZ18/25 configuration guide

Prior Scientific can supply stages and, in the case of the SMZ18 and older SMZ-series systems, motorized focus upgrades for these microscopes.

Motorized XY stages and sample holders

All stages listed below require the HSMZ1825 adapter. The SMZ18 or SMZ25 must be fitted with a P2- or P- prefix illumination base. For other illumination bases, please contact Prior Scientific. Transmitted light illumination intensity may be reduced when using this adapter.

Part	Description
H101A	ProScan upright stage, part encoded, 2 mm pitch, 200 step
HE01A	ProScan upright stage, encoded, 2 mm pitch, 200 step
H1P4A	ProScan upright stage, part encoded, 1 mm pitch, 400 step
HEP4A	ProScan upright stage, encoded, 1 mm pitch, 400 step
H473UP	Universal sample holder (slides, Petri dishes, small flasks), upright
H224LP	Low profile 3 in x 1 in slide holder
H234LP	Low profile, four 3 in x 1 in slide holder
H237LP	Low profile 3 in x 2 in slide holder
H229UP	Universal Petri dish holder, upright stages, up to 90 mm diameter
H230	Solid stage plate, H101A stages
H224ROT	3 in x 1 in manual rotating slide holder
H230B	Breadboard insert plate M4 & M6 (H101)
H220	H101 glass stage plate assy
HSMZ1825	Adapter for mounting stages on the SMZ1825

Flat top XY motorized stages and sample holders

Part	Description
H101P2F	ProScan upright stage, flat top, part encoded, 2 mm pitch, 200 step
H101E2F	ProScan upright stage, flat top, encoded, 2 mm pitch, 200 step
H101P1F	ProScan upright stage, flat top, 1 mm pitch, 200 step
H101E1F	ProScan upright stage, flat top, encoded, 1 mm pitch, 200 step
H3848	Low profile slide holder adapter kit for H101F
H230F	Solid stage plate, H101F stages
H224F	Low profile 3 in x 1 in slide holder, extended, H101F stages
H234F	Four 3 in x 1 in slide holder, H101F stages
H220F	Glass stage plate, H101F stages
H230FB	Breadboard stage insert assembly (H101F)
HSMZ1825	Adapter for mounting stages on the SMZ1825

Large format XY motorized stages and sample holders

Part	Description
H138A	ProScan upright stage, part encoded, 2 mm pitch, 200 step, for up to 8 slides
HE38A	ProScan upright stage, encoded, 2 mm pitch, 200 step, for up to 8 slides
H238LP	Low profile eight 3 in x 1 in slide holder
H238PLP	Low profile eight 3 in x 1 in slide holder, part recessed
H239	Solid stage plate, H138 stages
H288	Glass stage plate, H138 stages
HSMZ1825	Adapter for mounting stages on the SMZ1825

Motorized focus

The PS3H122S15 must be used with the SMZ18. The SMZ25 already has motorized focus, so no add-on system is required. The PS3H122S15 can also be fitted to SMZ1270 microscopes. All non-motorized systems must be fitted with a fine and coarse focus knob. Only the fine focus knob will be motorized. The H275LMT and H275LMTE can be used to translate the entire SZX18/25 head using the H275LSMZ in combination with the Nikon P2-FM focus mount adapter or P2-RNI2 intelligent nosepiece. Please note that when using the H275LMT and H275LMTE, it is possible to use much larger stages with the SMZ18/25 than indicated in this section of the sales guide.

Part	Description
PS3H122S15	Generic focus drive and adapter with rotating cable system preventing cable twisting
H275LMT	Extended motorized focus tower
H275LMTE	Extended motorized focus tower, encoded
H275LSMZ	Adapter arm for SMZ optics

Nikon MA200 configuration chart

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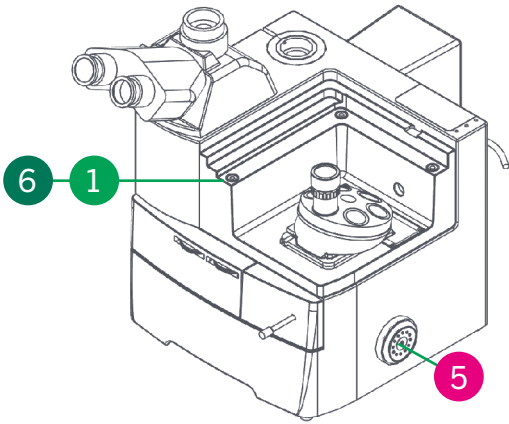
Sample holders

1

Stages

5

Motorized focus



Nikon MA200 configuration guide

The MA200 is an advanced inverted materials microscope. Prior can offer multiple high-end upgrades for this microscope. The MA100N is a smaller format inverted materials microscope. Prior Scientific can offer motorized focus and lower end motorized stage upgrades for this microscope,

Motorized XY stages and sample holders

All the sample holders listed are compatible with the H117N1M4 and H117E1M4. For the MA100, only an Optiscan system based around the ES107NTS stage (not shown) can be fitted to this microscope. The sample holders listed here are not compatible with this stage; contact Prior Scientific and your system will be configured with recessed (-R) rather than extra recessed (-XR) sample holders.

Part	Description
H117N1M4	ProScan inverted stage, non encoded, 1 mm pitch, 400 step, Nikon ma200
H117E1M4	ProScan inverted stage, encoded, 1 mm pitch, 400 step, Nikon ma200
H473XR	Universal sample holder (slides, Petri dishes, small flasks), extra recessed
H224XRLP	Low profile 3 in x 1 in slide holder, extra recessed
H229XR	Universal Petri dish holder, extra recessed
H234XR	Four 3 in x 1 in slide holder, extra recessed
H23X200	200 ml flask holder (Greiner)
H237XRLP	Low profile 3 in x 2 in slide holder, extra recessed
H229D35XR-6	Holder for 6 x 35 mm Petri dishes
H649	Holder for a single 1 in, 1.25 in and 1.5 in mounted metallurgical specimen
H657	Holder for one mounted metallurgical specimen, 2 in diameter
H658	Holder for six mounted metallurgical specimens, 1.25 in diameter
H659	Holder for one mounted metallurgical specimen, 15 in diameter with 1, 2, 4, or 8 chambers

Motorized focus

The PS3H122R plus H3273 combination is required to drive the fine focus knob of the MA200 and MA100 microscopes. The coarse focus will not be motorized.

Part	Description
PS3H122R	Generic focus drive and adapter with rotating cable system preventing cable twisting
H3273	IX focus sleeve.



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Nikon Sales Guide-V3-1023-EN-US