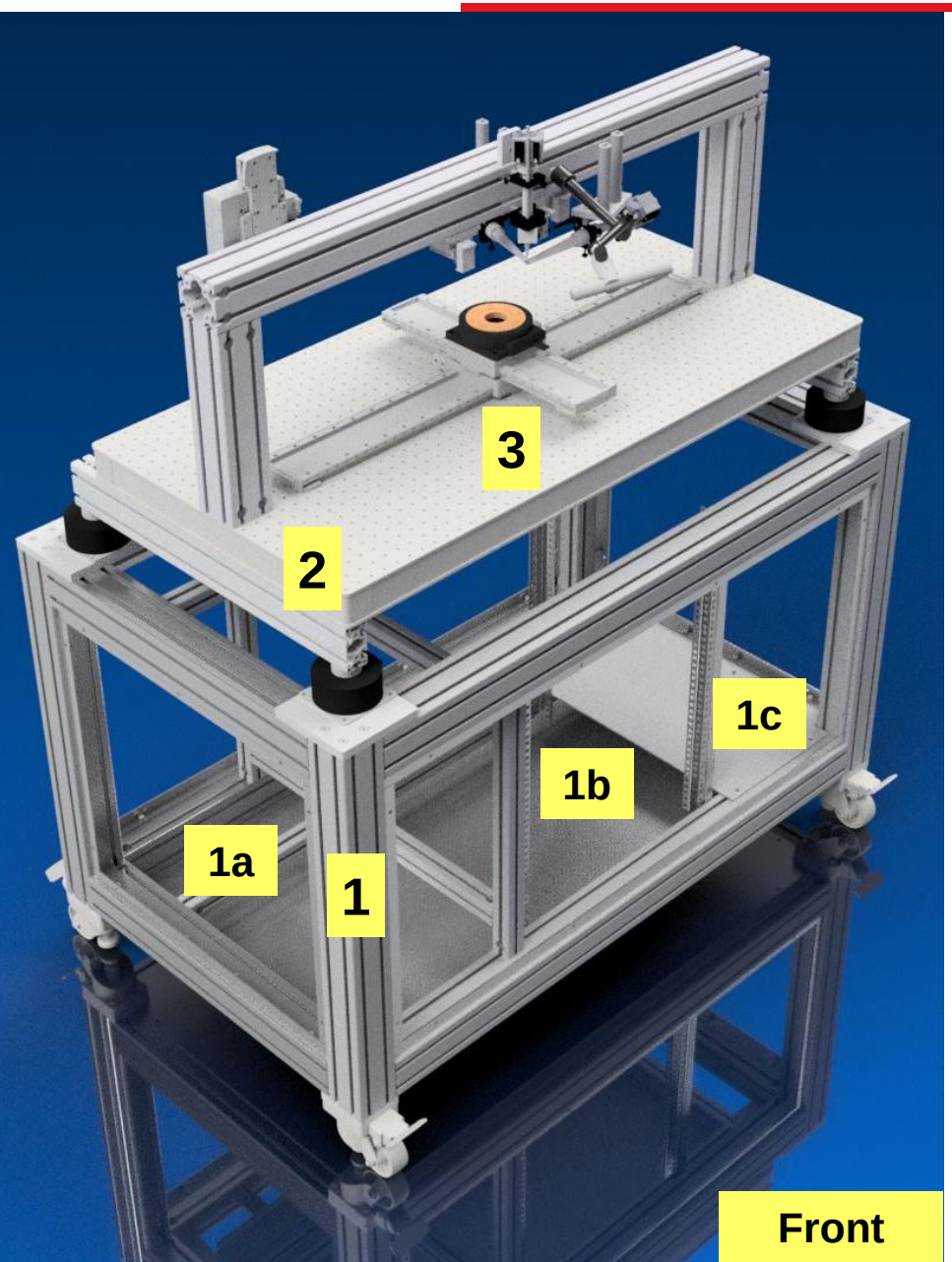
Micro Production System

1350 x 800



1. Underframe, 1350 x 800 mm footprint
1a Area for electric control cabinet
1b Area for 19“ rack unit electronics
1c Area for Computer

2. **Optical bench plate** hovering on an air damping system

3. **One long range X-axis**:
- Stroke = 800 mm,
- Movement resolution = 100nm

One long range Y-axis:
- Stroke = 320 mm,
- Movement resolution = 100nm

One high-precision rotary drive:
D = 120 mm, H= 37 mm,
- Movement resolution = 1200000 Increments/Turn
= 300 Micro-Degree step resolution

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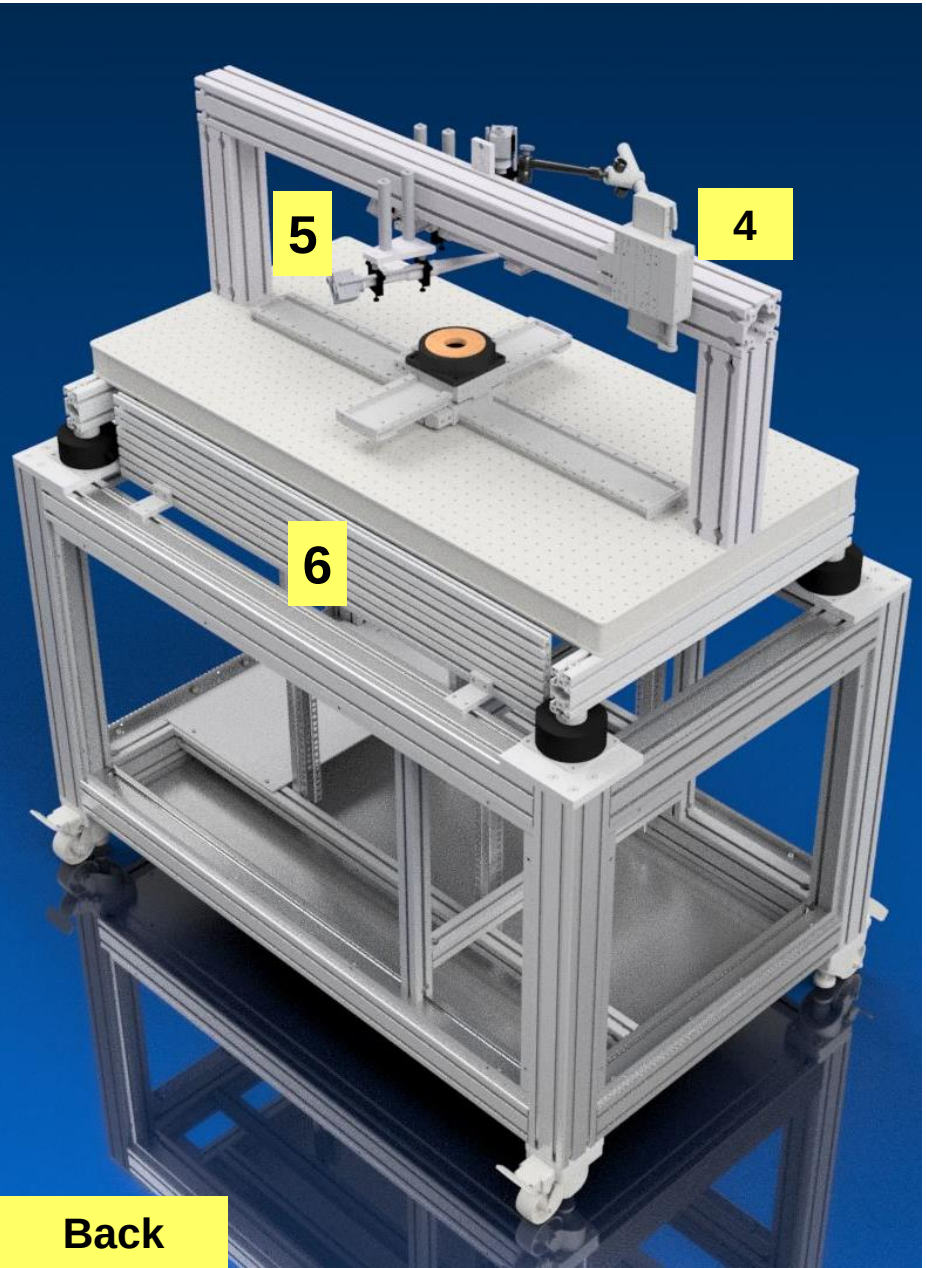
Nanotechnik

Micro Production System

1350 x 800



4. One strong long range vertical axis:
- Stroke = 80 mm,
- Movement resolution = 100nm
- Load compentation

5. **Video Microscope** (Rear Camera)

6. **Support area**:
- for switching, air support, cable sets etc.

Back

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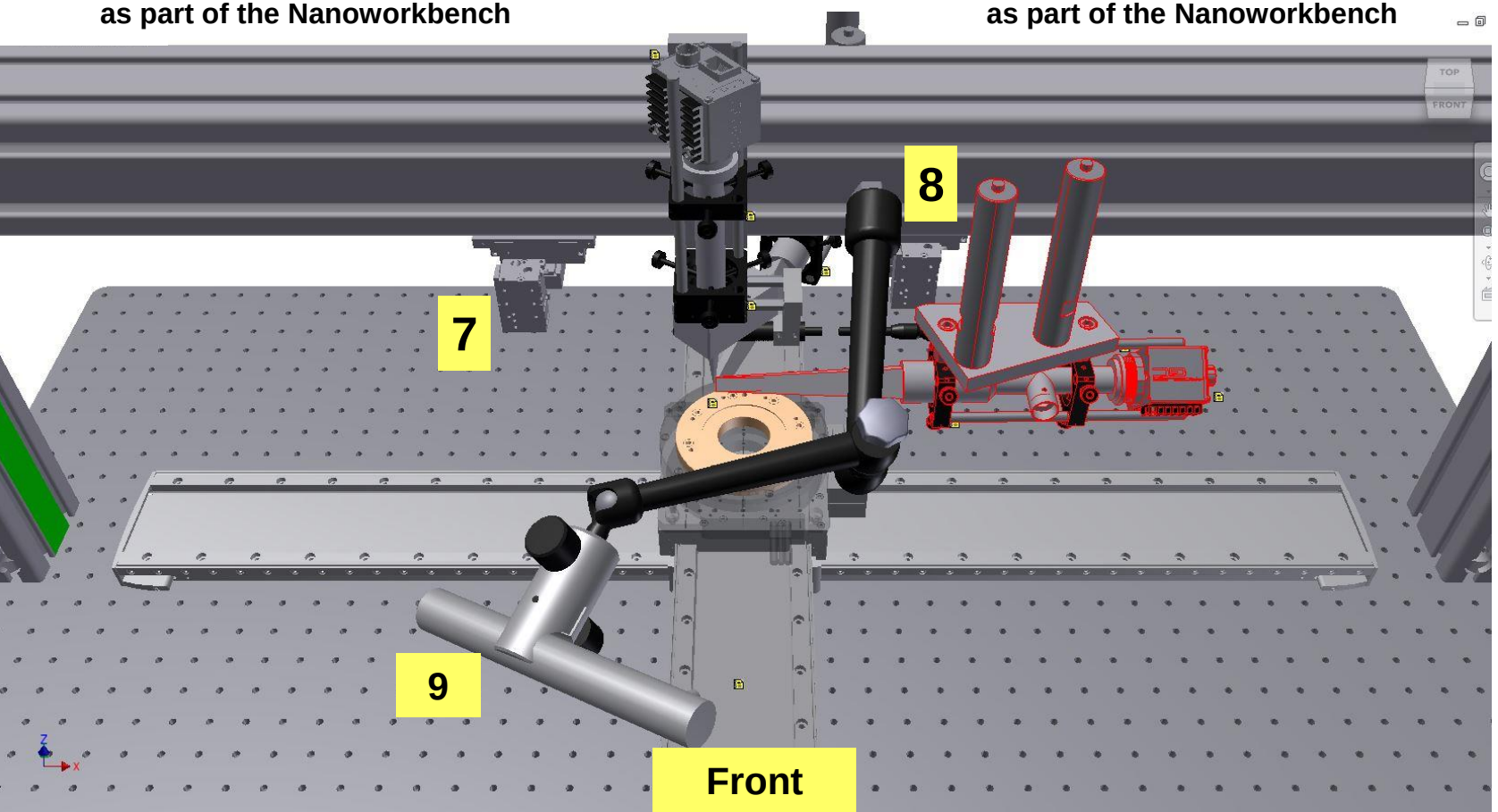
9. One Inspection Microscope:
- Movable by oil pressure pivot arm

7. One Nanorobotics Manipulator:
- Stroke: XYZ = 20x20x15 mm3
- Movement resolution = 0.5 nm
- Repeatability better 50 nm

as part of the Nanoworkbench

8. Second Nanorobotics Manipulator:
- Stroke: XYZ = 20x20x15 mm3
- Movement resolution = 0.5 nm
- Repeatability better 50 nm

as part of the Nanoworkbench



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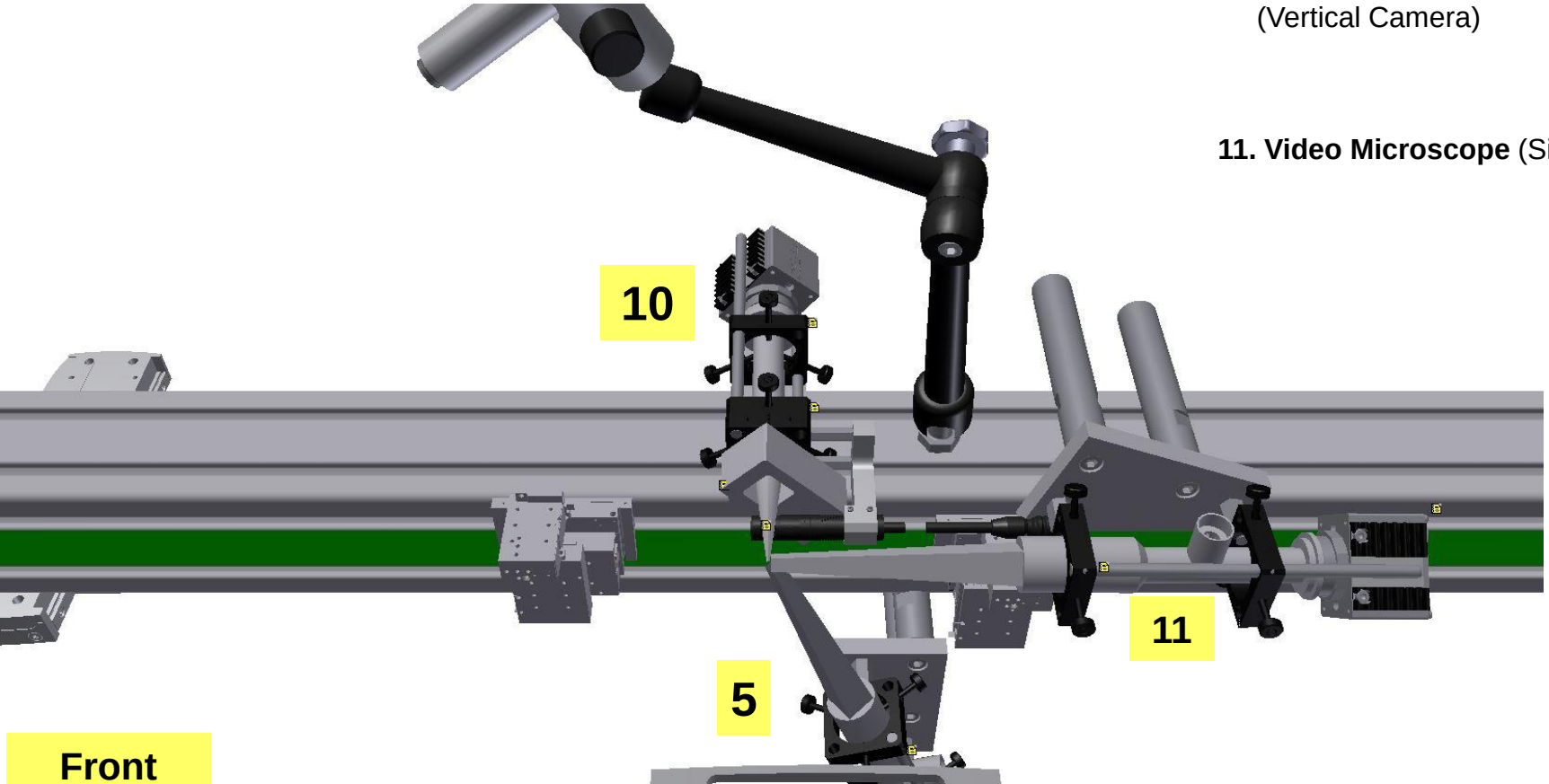
5. Video Microscope (Rear Camera)

10. One high-resolution Video Microscope
(Vertical Camera)

11. Video Microscope (Side Camera)



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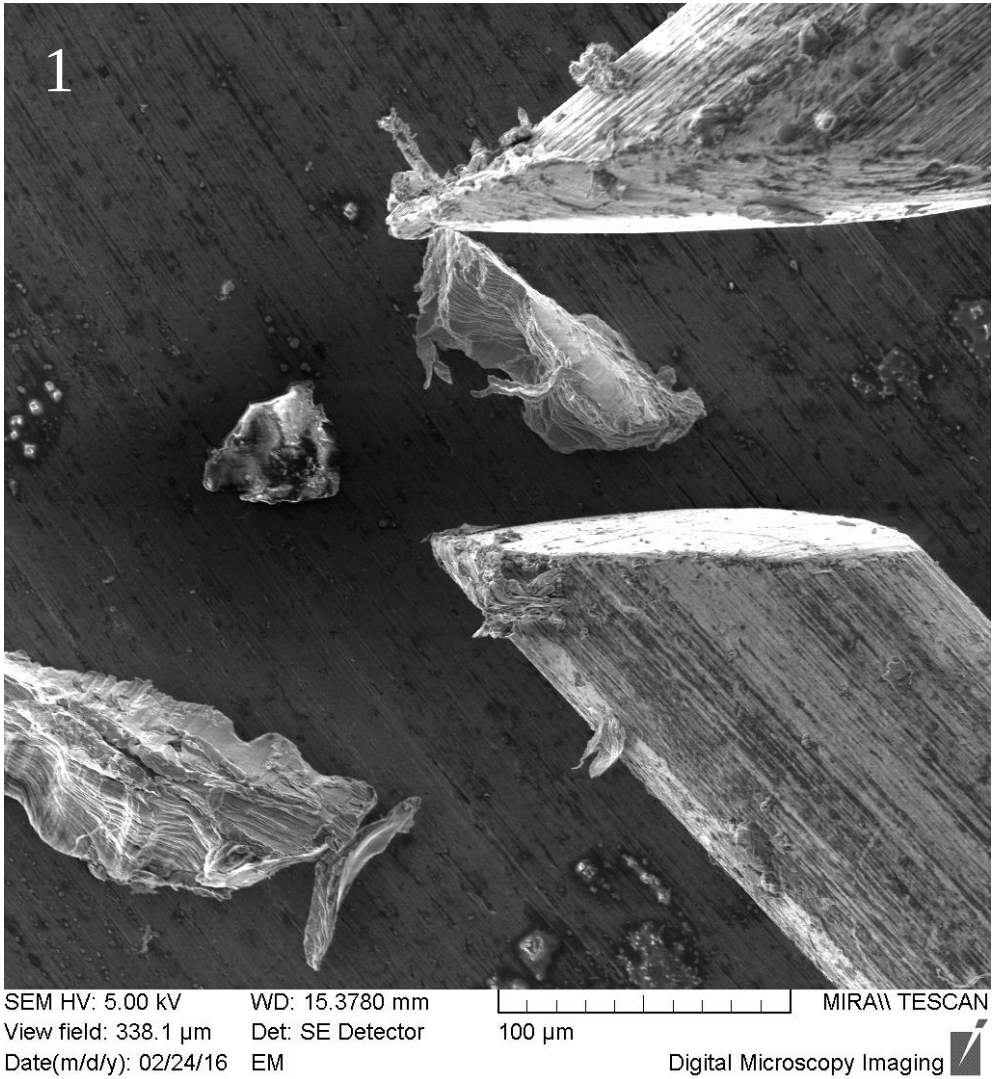
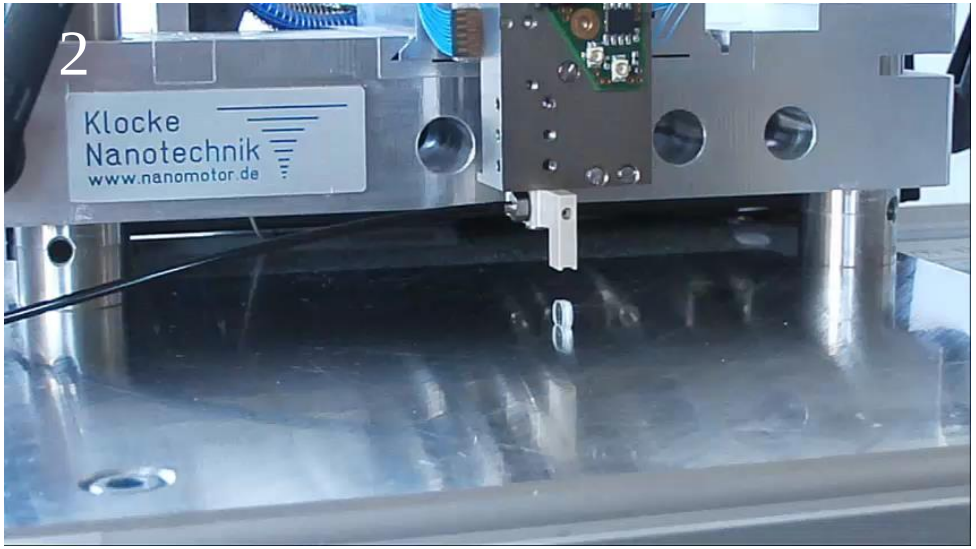


Gripper options:

1. Piezo Gripper for particles and samples between 20 µm and 300 µm
2. Vacuum gripper for samples above 300 µm



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Micro Production System

Component	Description	Feature
LG Axis X	Long range axis for movement in X	Stroke: 800 mm Movement Resolution: 100nm
LG Axis Y	Long range axis for movement in Y	Stroke: 320 mm Movement Resolution: 100nm
RD	High Precision Rotary Drive	D: 120 mm; H: 37 mm Movement resolution = 1200000 Icrements/Turn 300 µDegree step resolution
LG Axis Z	Strong long range vertical axis	Stroke = 80 mm Movement resolution = 100nm Load compensation
NMT XY	Nanorobotic Actuators XY	Stroke: 20 mm Movement resolution: 0.5 nm Repeatability better 50 nm
NMT Z	Nanorobotic Actuators Z	Stroke: 15 mm Movement resolution: 0.5 nm Repeatability better 50 nm

Micro Production System

Component	Description	Feature
Nanoflow	Dispenser system	For for distributing small amounts of adhesive fluids (option: conductive adhesives)
VG	Vacuum gripper system	Pick and place specific samples with a size bigger than 300µm
Piezo Gripper	Piezo gripper with integrated tip adjustment	Opening and closing stroke: 200µm Icrement of movement: 50nm Easy adjustment of exchangable tips
Sample heater	Development sample heater	Temperature: RT – 400°C Resolution: +/-10°C, Power: 200W
CCD Camera	video microscopes compatible with Option: pattern recognition system	Guaranteed visible feature size better 50µm High resolution option: 10µm/pixel
Inspection Microscope	variable-zoom inspection microscope	Zoom factor at least 100x Option:140x