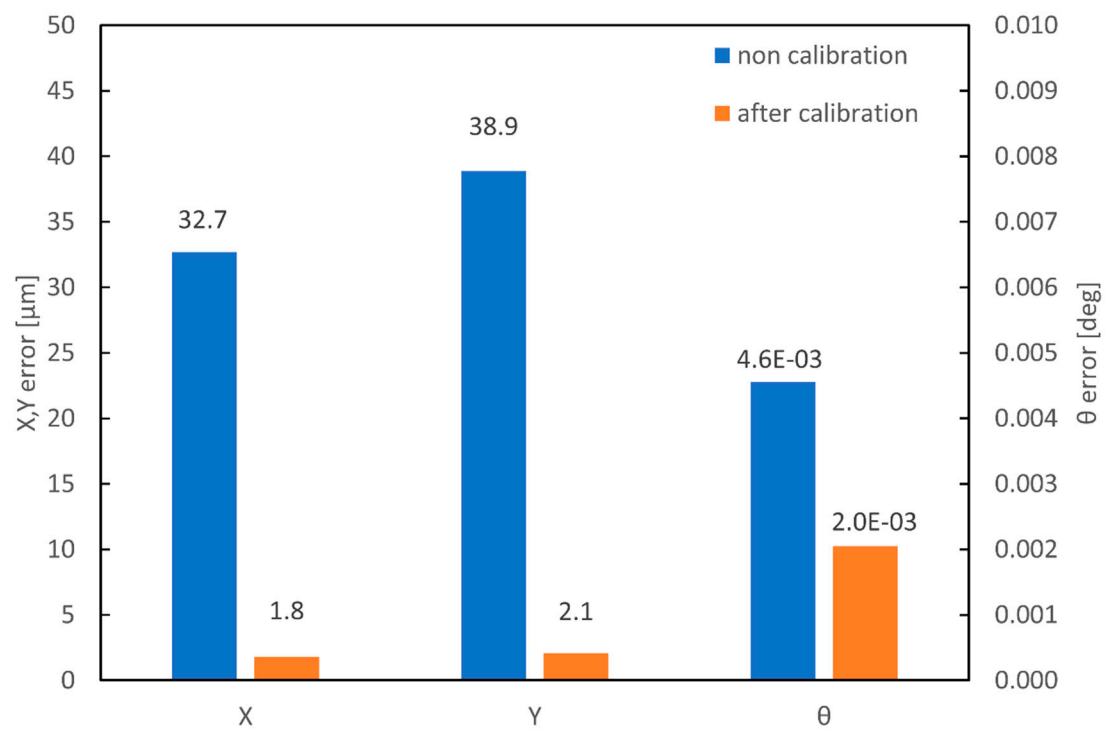# Supporting Information

Precise position control of holonomic inchworm robot using four optical encoders

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Table S1 Specification and score of the representative micromanipulation robots.

Micromanipulations (Score)	Dimension [mm]	DoF	Range [mm, deg]	Velocity [mm/s]	Resolution [nm]	Mass [g]	Payload [g]
Inchworm (20)	$86 \times 86 \times 15$ (3)	$XY\theta_z$	$\infty \times \infty \times \infty$ (4)	6.5 (3)	10 (3)	100 (4)	1000 (3)
USM (20)	$55 \times 55 \times 14$ (4)	$XY\theta_z$	$\infty \times \infty \times \infty$ (4)	31.5 (5)	5 (2)	145 (3)	300 (2)
PER-Hexpod (19)	$68 \times 60 \times 59$ (2)	XYZ $\theta_x\theta_y\theta_z$	$\infty \times \infty \times 0.018$ $\times 0.05 \times 0.03 \times \infty$ (5)	1.89 (2)	4.53 (4)	450 (2)	10000 (4)
miBot (19)	20.5×21.7 $\times 12.5$ (5)	$XYZ\theta_z$	$20 \times 20 \times 5.81 \times \infty$ (2)	1.5 (1)	0.02 (5)	6 (5)	6 (1)
XY stage (13)	345×345 $\times 110$ (1)	XY	100×100 (1)	10 (4)	1000 (1)	7600 (1)	16000 (5)

Fig. S1 Plots of XYθ-axes errors vs. XYθ-axes simultaneous displacement for (X, Y, θ) = (4000μm, 4000μm, 5˚)

Movie S1 3DOF motion of holonomic inchworm robot.

See attached movie