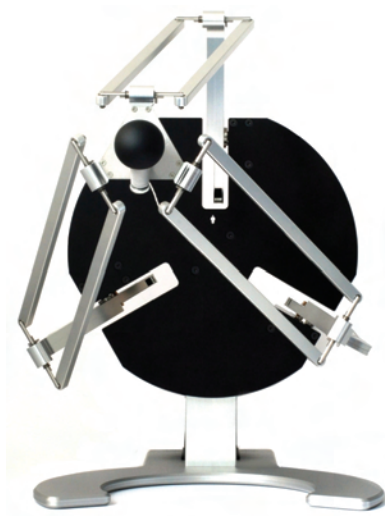


delta.x haptic devices

force feedback interfaces



delta.3



delta.6

The **delta.3** is a high performance, high precision force feedback interface based on the original delta manipulator. The interface offers 3 active degrees-of-freedom in translation and features a **larger workspace** than the omega.x family of devices. With its unique parallel mechanical design, the **delta.3** can display **large continuous forces** at any location within its workspace.

Built with the same meticulous care as its **delta.3** counterpart, the **delta.6** haptic device offers an **active wrist extension** with full force- and torque-feedback capabilities. Built with a **modular architecture**, the delta.x family of devices are highly accessible systems for developers who wish to **extensively customize their device** to best meet the specification of their application.

Conceived and manufactured in Switzerland, the **delta.x** range is specifically designed for demanding applications where **large workspace and flexibility of use** are critical, including:

- › medical and space robotics
- › micro and nano manipulators
- › teleoperation consoles
- › virtual simulations
- › training systems
- › research

force dimension

delta.x

workspace	translation	Ø 400 x 260 mm	
	rotation	± 22 deg	(delta.6)
forces	translation	20.0 N	
	rotation	150 mNm	(delta.6)
resolution	translation	0.02 mm	
	rotation	< 0.04 deg	(delta.6)

electronics

interface	standard	USB 2.0
	refresh rate	up to 4 KHz
power	universal	110V - 240V

software

platforms	Microsoft	Windows XP / Vista / 7 / 8 Windows CE 7
	Linux	kernel 2.6 / 3.x
	Apple	OS X
	QNX	6.5 / 6.6
	WindRiver	VxWorks 6.3 / 6.8 / 6.9
software	haptic SDK	
	robotic SDK	

features

structure	delta-based parallel kinematics	
	hand-centered rotations	(delta.6)
	rotations decoupled from translations	(delta.6)
	active gravity compensation	
calibration	automatic	
	driftless	
user input	1 programmable button	(delta.3)
safety	velocity monitoring	
	electromagnetic damping	

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