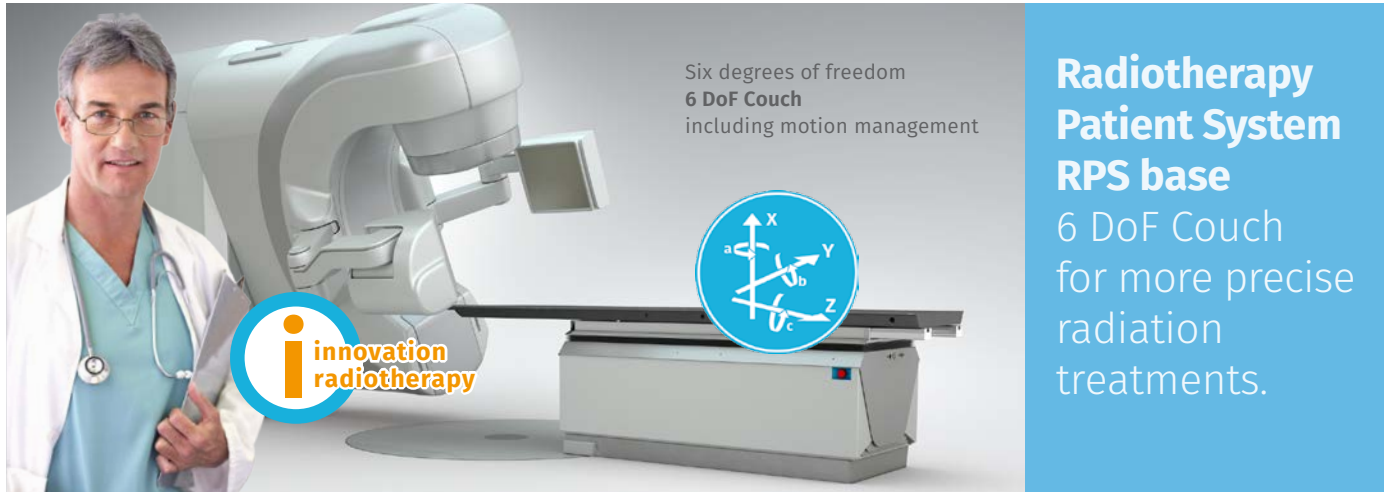


Radiotherapy Patient System „RPS base“ by gKteso: 6-DoF Robotic Couch System for Radiology Cancer Treatments



Description and essential performance features of the 6DoF couch system.

The RPS base features a robotic patient-positioning platform with six degrees of freedom. It enables accurate and remote geometric correction of any misalignments detected by state-of-the-art image guidance systems, thereby closing the gap in the 6DOF-chain of IGRT localisation and tumour isocentre targeting.

The RPS base allows sub-millimetre patient positioning accuracy in six degrees of freedom, improving clinical workflow and patient confidence. 6D means that the system can correct translational errors (x, y, z) in patient positioning as well as rotational errors (roll, pitch and yaw).

An internal sensor system which monitors the couch's position is also part of RPS base system, allowing closing the control loops for patient positioning. All movements can be controlled either by the handheld controller next to the couch in the treatment room or by a software application.

The RPS base features the latest carbon fibre composite tabletop solutions.

Intended use and intended user

The RPS base is intended to be used for accurate patient positioning within a radiation therapy treatment environment. It comprises of:

- The RPS base to support and aid in positioning a patient,
- Software to control the RPS base position.

Indications:

The intended use of the RPS base is to support aid and control in positioning a patient during radiation therapy of various body regions. The system is not restricted to certain subpopulations (e.g., those defined by age, sex, ethnicity and organ function and disease severity or similar).

Couchtop specifications

Material	non-conductive Carbon fiber
Length	260cm / 102"
Width	53cm / 21"
Indexing system	14cm / 0.55"
Attenuation (% by 6MV)	<2,4

6 DoF Couch motions

Axis	Range	Speed	Absolute positioning accuracy	Corrective positioning accuracy
Vertical movement	64 - 151cm 25" - 59"	0 - 50mm/s 0 - 2"	+/- 0.5mm (+/- 0.02")	+/- 0.1mm +/- 0.004"
Lateral movement	+/- 250mm +/- 10"	0 - 50mm/s 0 - 2"	+/- 0.5mm +/- 0.02"	+/- 0.1mm +/- 0.004"
Longitudinal movement	+/- 570mm +/- 22"	0 - 80mm/s 0 - 3"	+/- 0.5mm +/- 0.02"	+/- 0.1mm +/- 0.004"
Pitch rotation	+/- 5°	0 - 1°/s	+/- 0.1°	+/- 0.05°
Roll rotation	+/- 5°	0 - 1°/s	+/- 0.1°	+/- 0.05°
Yaw rotation	+/- 5°	0 - 1°/s	+/- 0.1°	+/- 0.05°

Couch specifications

Mode of operation	continuous
6D simultaneously	yes
Isocentre accuracy at isocentric height	<2,0mm (<0.1")
Typical couch deflection (IEC60976)	<2,0mm (<0.1")
Maximum weight of patient	250kg (550lbs)
Hand Held Controller	Digital display absolute Motion enabeling Speed selection Home position Preset position RFID function
Remote Enable Controller	Couch enabeling
Interlocks	Touch guide HT Illegal motion Motor stop

Power Supply

Mains	
(VAC)	100 – 230 ±15%
(Hz)	50 / 60
(A)	16
Internal Power	
(VDC)	max. 48
(A)	max. 20