CIVCO Technical Data Sheet

Protura™

Product Name	Protura™ Patient Positioning System
Product Number	Siemens: MT6X200TU, MT6X200TUR, MT6X200TE, MT6X200TER Varian: MT6X300TU, MT6X300TUR, MT6X300TE, MT6X300TER Elekta: MT6X400TU, MT6X400TUR, MT6X400TE, MT6X400TER
Kits that include this product	None
General Description	Robotic Patient Positioning System
Indications for use	The Protura Couch is intended to support and aid in positioning a patient during radiologic, radiation therapy, and other medical procedures. The Protura Couch adds Pitch and Roll to the normal X, Y, Z and Yaw motions. The additional Pitch and Roll make patient alignment simpler without the need to manually move the patient on the table. The Protura Couch Software is intended to interface between record and verify systems, linear accelerator (Linac) software systems, Linac safeguard systems, and/or image guidance systems and the Protura Couch. The Protura Couch Software is also capable of operating the Protura Couch (6 Degree Axis Couch).
FDA Cleared	Yes
CE Marked (EU DOC)	Yes

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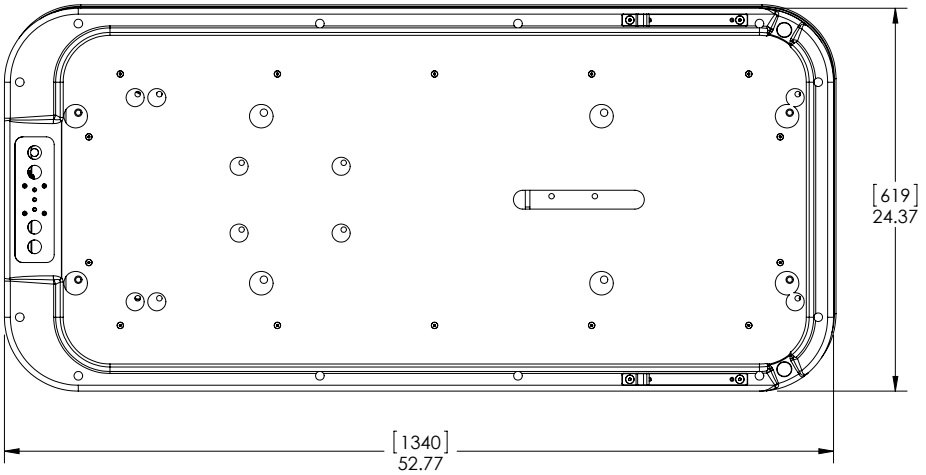
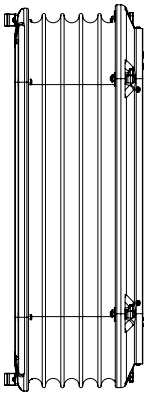
Technical Details

Materials	Various		
Protura™ System Weight	90 kg	198 lbs	
Patient Weight Capacity	440 lbs (200kg) Protura Approved 372 lbs (169kg) Varian Pedestal 359 lbs (163 kg) Varian Pedestal w/ UCT LE		
Protura System Height	15 cm in load/unload poisition	20 cm in zero (pre-shift) position	
Dimensions (cm)	134.0 x 61.9 x 20.6		
Technical Drawing			





Resolution	0.1mm & 0.1deg		
Repeatability	Verification Test Results	~0.01mm (linear)	~0.001deg (rotational)
	Protura Specification	<0.1mm (linear)	<0.05deg (rotational)
Speed	Low ~4 mm/s	Medium ~8mm/s	Fast ~16 mm/s

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Country of Manufacture	USA
Unit Pack	1 Piece
Units / Box	1 Piece
Shelf Life	Not Applicable
Warranty	1 Year
Sterilization	Non-Sterile
Launch Date	December 2009

Accuracy

Manufacturing Acceptance	Protura™ robotic systems are 100% inspected to 0.3mm accuracy with the following single direction moves:			
	Longitudinal	+/-50mm	Roll	+/-2.5deg
	Lateral	+/-25mm	Pitch	+/-2.5deg
	Vertical	+/-25mm	Yaw	+/-2.5deg
Clinical Acceptance	Sub-millimeter (<1.0mm)			
Positioning Confidence	Internal redundeancy sensor system using optical linear slides. Protura legs use dual encoders for precision placement. Parallel kinematics provide single vector shift in 3D space.			

System Configurations

Pivot Point	The Protura is configured with a virtual pivot point so all rotations are performed about isocenter.
IGRT Coordinate System, Pedestal Coordinate System	The user can create or modify IGRT Coordinate Systems in the Protura software to match site specific needs.
Move Reports	Reports can be generated for Patient Moves or Daily Move Reports.

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External System Integration

Software interface requires specific external software versions. Contact CIVCO for version compatiblity.

Pedestal Compatibility	Elekta Precise	Varian Exact C3 Platform	Siemens TXT
Remote Control System Align RT	Auto transfer of patient information Auto create patient Auto delete patient, removed if no shift information Auto transfer pedestal position to Protura™ (when Align RT is integrated with the pedestal) Auto transfer 6DOF shift information		
Varian with ARIA ARIA, 4DTC, OBI **Varian with MOSAIQ** MOSAIQ, 4DTC, OBI	Auto transfer of patient information Auto create patient Auto transfer pedestal position to Protura Auto transfer 6DOF shift information		
Elekta MOSAIQ	Auto transfer of patient information Auto create patient Auto delete patient, removed if no shift information		
Elekta iCOM	Auto transfer pedestal position to Protura		
Elekta XVI	Auto transfer 6DOF shift information		

Accessories

Couchtop	Unviersal Couchtop™ Long Extension (primary option) Universal Couchtop One Piece Universal Couchtop Two Piece
Couchtop Accessories / Patient Immobilization & Positioning	See CIVCO Solutions Guide

Committed to Positively Impacting Patient Care

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