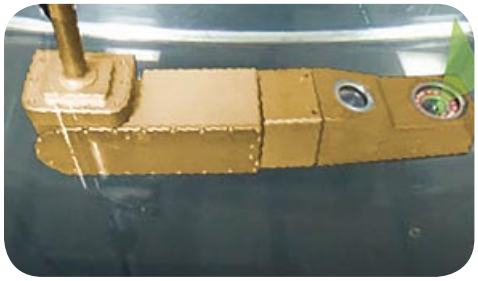
NEWTON

Fresh Perspectives / Dynamic Solutions

Pan-Tilt Arm for Newton Underwater Laser Scanners

The Pan-Tilt Arm enables precise and rapid positioning of Newton underwater laser scanners to capture dimensional measurements from multiple angles of a marine target. The Pan-Tilt Arm offers greater control leading to more accudrate laser scans in tight locations.

Construction:
The Pan-Tilt Arm is constructed of rugged, industrial-grade hardware and electronics. The Pan-Tilt Arm offers complete freedom of movement because all cables are internal. Signals to and from the scanner head pass through the "wrist" and "elbow" and the single, combined control/power cable emerges from a port in the pole attachment, terminating with a Seacon Mini-con dry mate connector.



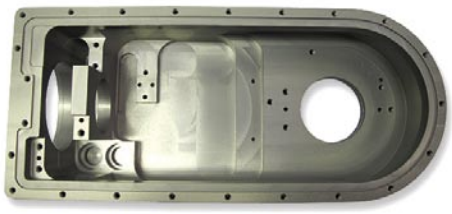
The flexible PT200UW features an operation range of 185 degrees at the "elbow" and infinite rotation at the "wrist."

Deployment:
The Pan-Tilt Arm can be used to deploy a scanner by a variety of methods: pole mounting, an ROV, or other robots.

Control consoles for the Newton underwater scanners are fitted with directional and speed controls for the Pan-Tilt Arm on the front panel.

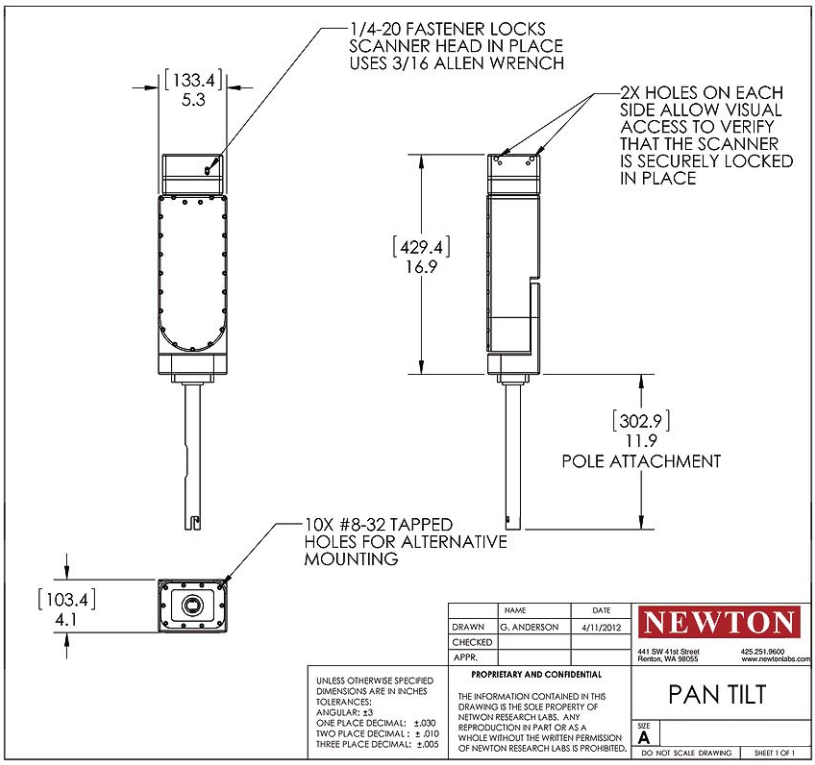
Safety Feature:
As a safety feature incorporated into the design, both axis motors are encoded with a stall-detection feature, so that if either, or both, are stalled during rotation, they will instantly shut down.

Control:
Two-axis directional control of the Pan-Tilt Arm is achieved with a joystick that is installed on the front panel of the laser scanner control consoles. Pan and tilt speed is controlled with an adjacent rheostat knob.



Casings and covers are machined from solid billets of 6061-T6 aluminum stock.

A Steady Platform with Precise Positioning



Background of Newton Labs

Newton Labs is a Seattle area-based privately held developer and manufacturer of machine vision and robotic systems. Newton's powerful, easy to use, and industrially rugged systems provide solutions for wide ranging applications in many sectors, including aerospace, automotive, bottling, electronics, medical, packaging, and nuclear, among others. In 20 years Newton has deployed more than 20,000 machine vision and automation systems worldwide, many that are first-of-a-kind.

Pan-Tilt Arm Technical Specifications

Elements	Details
Length (main body)	16.9 in. (429 mm)
Length (pole attachment)	11.9 in. (303 mm)
Width	5.25 in. (133 mm)
Height	4.0 in. (102 mm)
Weight (in air)	16.5 lbs. (7.5 kg)
Weight (in water)	5.0 lbs (2.27 kg)
Cable	LLDPE polyurethane jacket, gel filled
Construction	Machined from solid billet of 6061-T6 aluminum stock
Fittings & retainers	300 series stainless steel
Mounting attachments	*To pole or robot:* Ten, #8-32 threaded alternate mounting holes on "elbow" end --- *To scanner:* Two auto-aligning clamps engaged via a 3/16 in. Allen wrench
Standard operating temperature	110° F (43.3° C) in water
Storage temperature	0° to 160° F (- 18° to 71° C)
Power input voltage/current	2 amps, powered by the control console
Range of operation - "elbow"	185 degrees
Range of operation - "wrist"	Infinite rotation
Pan-tilt & rotation control	Via joystick and speed control rheostat on the control console

The Pan-Tilt Arm accommodates all underwater laser scanners by Newton Labs.

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