

VTC-Series

Multi-Tow Tension Controller



New for 2021



Montalvo VTC Multi-Tow Tension Controller

The all new Vanguard Multi-Tow Tension Controller - VTC (a component of the Montalvo Vanguard System works in conjunction with VLC Load Cells and VCB Creel Brakes). It provides precise, repeatable tension control of individual ends. Capable of controlling each position in your process from an easy to utilize interface including 24 tow tension indication capability.

Offering a robust line up of features and functions (ex: soft start, break detection, inertia compensation, etc.) to maintain high quality production from start to finish, the VTC is easy to set up and operate, providing consistent results. Achieve precise tension measurement from start to finish for higher quality end product and less scrap.

Features and Benefits

- ▶ High End Count Capacity
- ▶ Selectable Simultaneous 24 Tow Tension Indication and Control
- ▶ Individual, Group and/or Global Settings
- ▶ Single Interface for Managing Every Tow in Your Process
- ▶ Alarms for High Tension, Low Tension and No Signal (Break Detection)
- ▶ Data Logging for Process Analysis
- ▶ Used for Providing Continuous Tension Indication or Connect to a Control Scheme to Produce Automated, Continuous Closed Loop Tension Control System

VTC-Series

Multi-Tow Tension Controller

The Interface

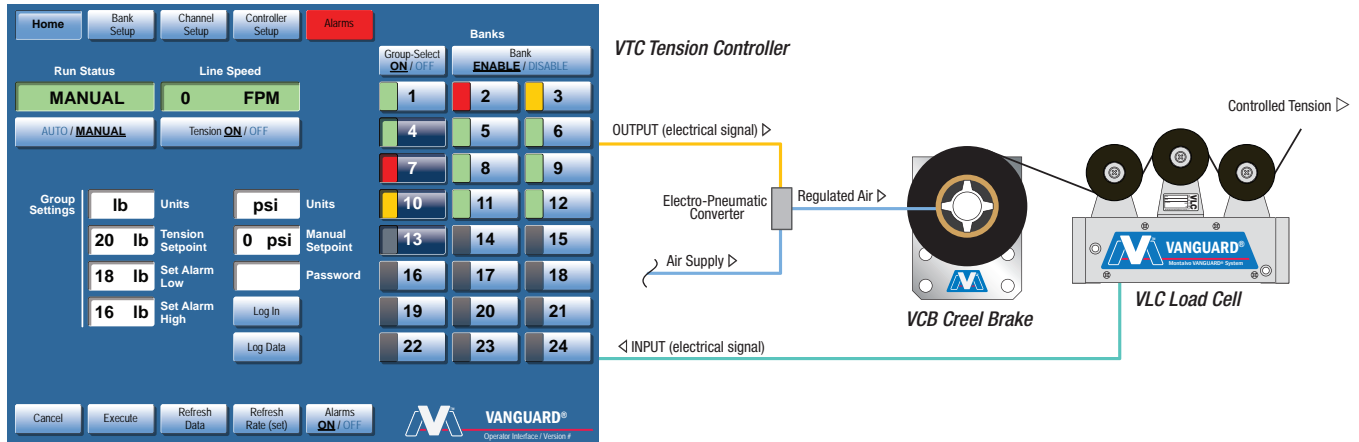
The interface is a web-based control panel for the VTC-Series Multi-Tow Tension Controller. It features a top navigation bar with buttons for Home, Bank Setup, Channel Setup, Controller Setup, and Alarms. The main area is divided into several sections:

- Run Status:** Shows the current mode as **MANUAL** (with **AUTO / MANUAL** toggle) and **Line Speed** as **0 FPM** (with **Tension ON / OFF** toggle).
- Group Settings:** Includes input fields for **lb** (Units) with values **20 lb** (Tension Setpoint), **18 lb** (Set Alarm Low), and **16 lb** (Set Alarm High). It also has fields for **psi** (Units) with a value of **0 psi** (Manual Setpoint) and a **Password** field.
- Bank Selection:** A grid of 24 buttons labeled 1 through 24, representing individual banks. A **Group-Select ON / OFF** button and a **Bank ENABLE / DISABLE** button are positioned above the grid.
- Bottom Controls:** Includes **Cancel**, **Execute**, **Refresh Data**, **Refresh Rate (set)**, and **Alarms ON / OFF** buttons.

Callouts provide additional context:

- Bank Setup:** Configure settings for each **Bank** (group) of load cells.
- Channel Setup:** Configure settings for each **Channel** (individual load cell).
- Alarms:** View critical Tension and Alarm settings.
- Log Data:** Log data for process analysis.
- Bank Selection:** Configure Banks as groups. Enable or disable groups. Monitor input and quickly interact with individual ends, groups and banks.
- Alarms ON / OFF:** Clear and Quick Alarm Indication.

How It Works



Specifications

Supply Voltage	24 VDC
Power Consumption	100 VA
Load Cell Supply	24 V
Load Cell Input	0.5-4 V
Gain Range	1x - 64x
Regulator Output	0-10 V
Operating Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	14 to 176°F (-10 to 80°C)
Degree of Protection (non-enclosed pcb version)	IP10
Certification	CE / RoHS

Functions

- Manual / Auto
- Tension On / Off
- Auto Setpoint
- Manual Setpoint
- Soft Start
- Anti Coast

Controller Port

USB Type B

PC Recommended Requirements

- Windows 10 (64 bit)
- Processor: Intel I5-7500 or better
- Ram: 8gb system memory
- Graphics Driver: DirectX9 or later
- Storage: 40 gb of available space

VLC-Series

Individual End Tension Load Cells



IP54

Montalvo VLC Series Individual End Tension Load Cells

The all new Vanguard Load Cell - VLC (a component of the Montalvo Vanguard System) is a specially designed load cell for providing precise, repeatable tension measurement of individual tows. Interchangeable pulleys combined with a narrow, stackable profile, and a wide range of load rating options ensures the VLC Series meets the requirements of practically any process running tows or single strand materials (carbon, glass, textile, wire, etc).

Designed and built for the unique and often low-tension requirements of these materials, achieve precise tension measurement from start to finish for higher quality end product and less scrap.

Features and Benefits

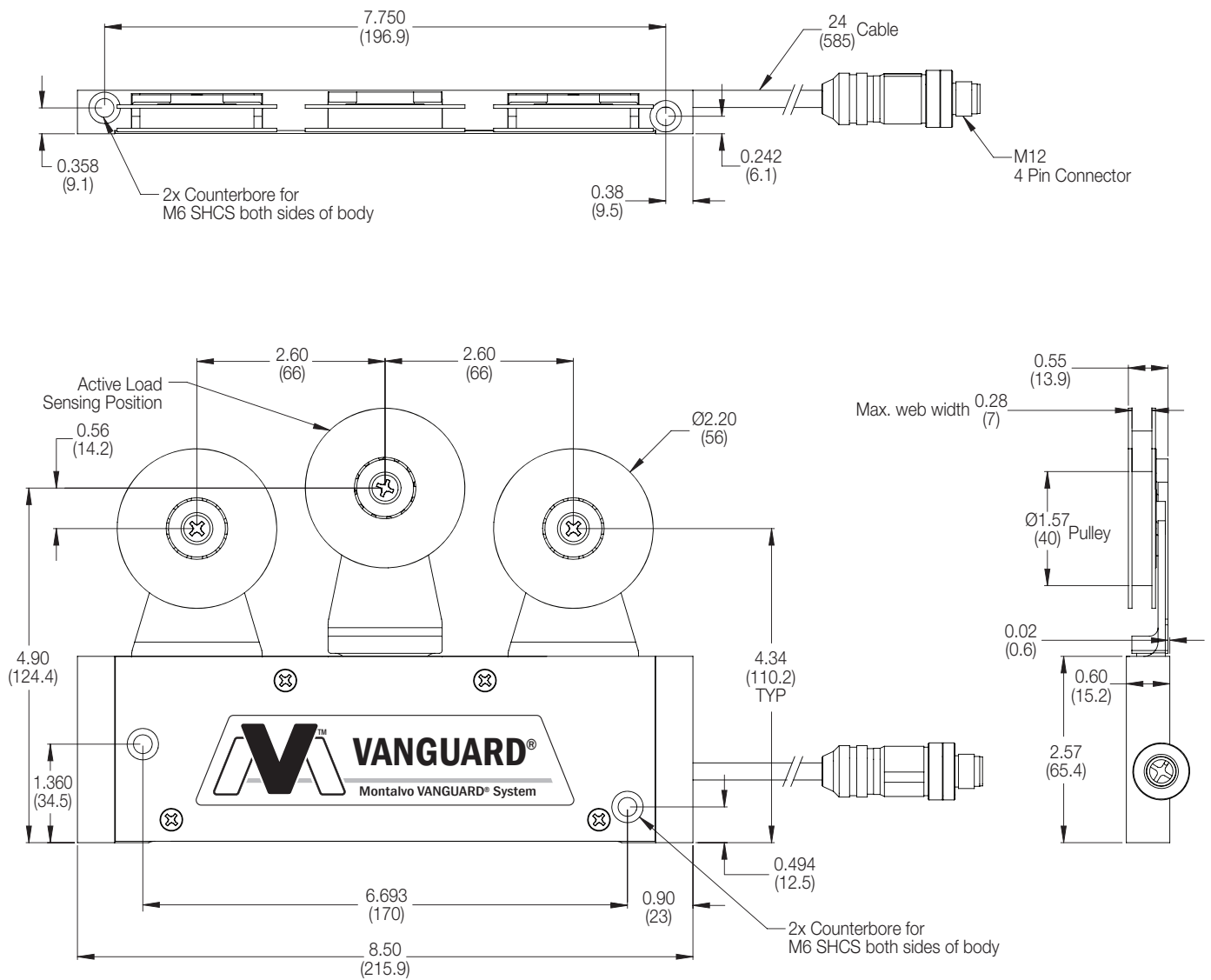
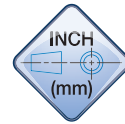
- ▶ Wide Sensing Ranges - from 20g to 10kg
- ▶ Pre-Calibrated – Just Install and Go
- ▶ Built-In Amplifier for Easy Connection to Existing I/O
- ▶ Precise, Repeatable Tension Measurement of Individual Ends
- ▶ High Overload Protection
- ▶ Interchangeable Pulleys/Rollers to Match Material Widths
- ▶ Compact, Stackable Design to Meet Process Space Requirements
- ▶ Produces Superior Tension Signal for Maximum Accuracy
- ▶ Used for Providing Continuous Tension Indication or Connect to a Control Scheme to Produce Automated, Continuous Closed Loop Tension Control System



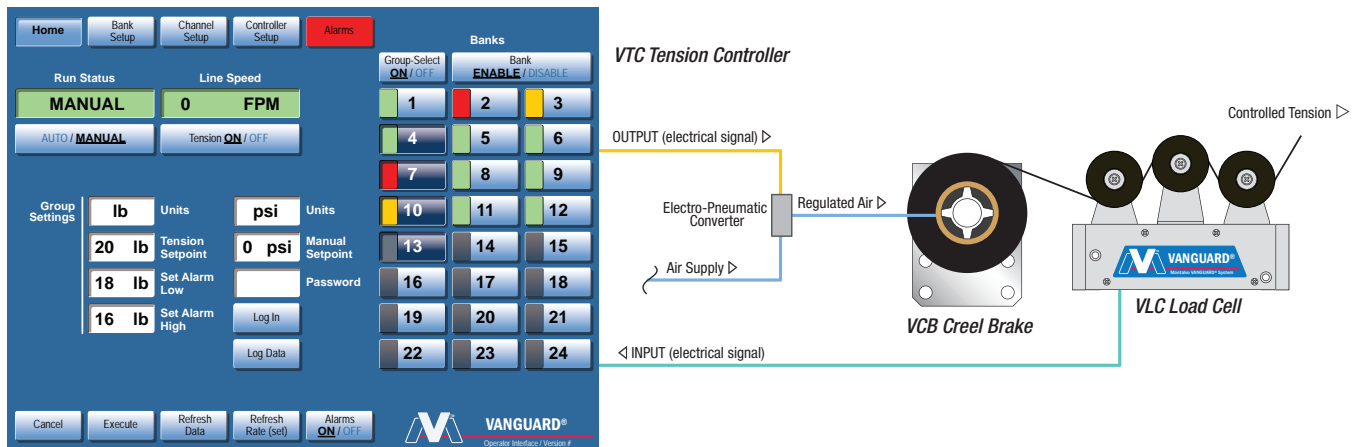
VLC-Series

Individual End Tension Load Cells

Dimensions



How It Works



Specifications

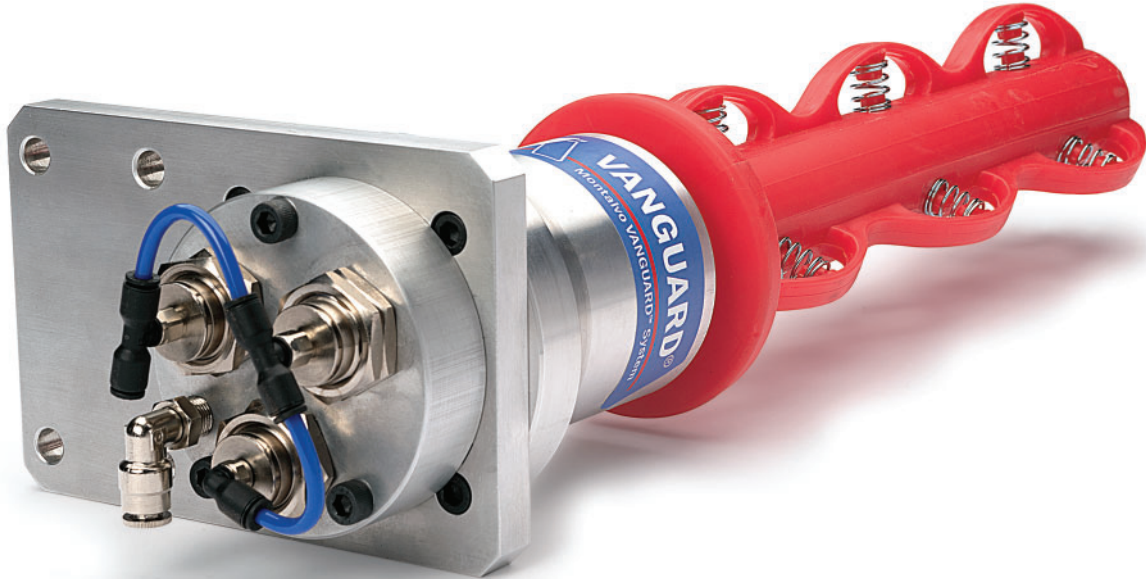
Power (with on board amplifier - standard)		24 VDC
Power (without on board amplifier - option)		5 VDC
Output-Nominal		25-50 mV/V
Gauge Resistance		80-130 Ω
Gauge Type		Half Bridge Semiconductor Strain Gauge
Non-Repeatability		±1.5 % full span
Non-Linearity and Hysteresis (combined)		±1.5 % full span
Load Rating	VLC-02	0.44 lb (200 g)
	VLC-08	1.77 lb (800 g)
	VLC-12	2.65 lb (1.2 kg)
	VLC-20	4.4 lb (2 kg)
	VLC-50	11 lb (5 kg)
	VLC-100	22 lb (10 kg)
Overload Stops		110% of Load Rating
Overload Rating		150% of Load Rating
Axial Overload Rating		20% of Load Rating
Classification		IP54
Temperature - Operating Range		-4 to 150°F (-20 to 70°C)
Temperature Coefficient (% per degree)		0.02 (0.01) typ.
Deflection		0.008 to 0.015 in (0.203 to 0.381 mm)
Body Finish		Aluminum
Roller Finish*		Anodized Aluminum

*Optional roller materials, finishes, and profiles available. Contact Montalvo for more information.

VCB-Series

Individual Tow Tension Creel Brakes

New for 2021... Creel Brakes!



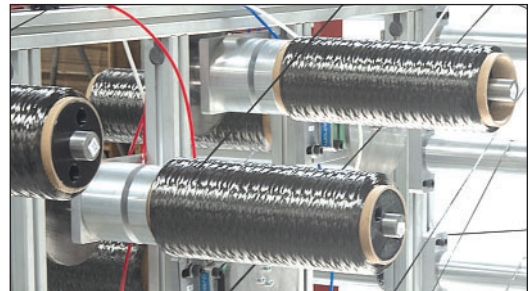
Montalvo VCB Series Individual Tow Tension Creel Brakes

The all new Vanguard Creel Brake - VCB (a component of the Montalvo Vanguard System) is a specifically designed brake for providing precise, repeatable tension/torque control of individual creel positions. A compact profile and a range of torque options ensures the VCB Series meets the requirements of practically any process running tows or single strand materials (carbon, glass, textile, wire, etc).

Designed and built for the unique and often low-tension requirements of these materials, to achieve smooth, repeatable torque control from start to finish for higher quality end product and less scrap.

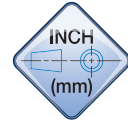
Features and Benefits

- ▶ Wide Torque Ranges and Tension Profiles
- ▶ Fully Assembled – Just Install and Go!
- ▶ Long Service Life Friction Material
- ▶ Precise, Smooth, Repeatable Torque Control of Individual Positions
- ▶ Integrated Core Holders to Accept Multiple Material Types
- ▶ Compact Design to Meet Process Space Requirements
- ▶ Used for Providing Continuous Tension Indication or Connect to a Control Scheme to Produce Automated, Continuous Closed Loop Tension Control System



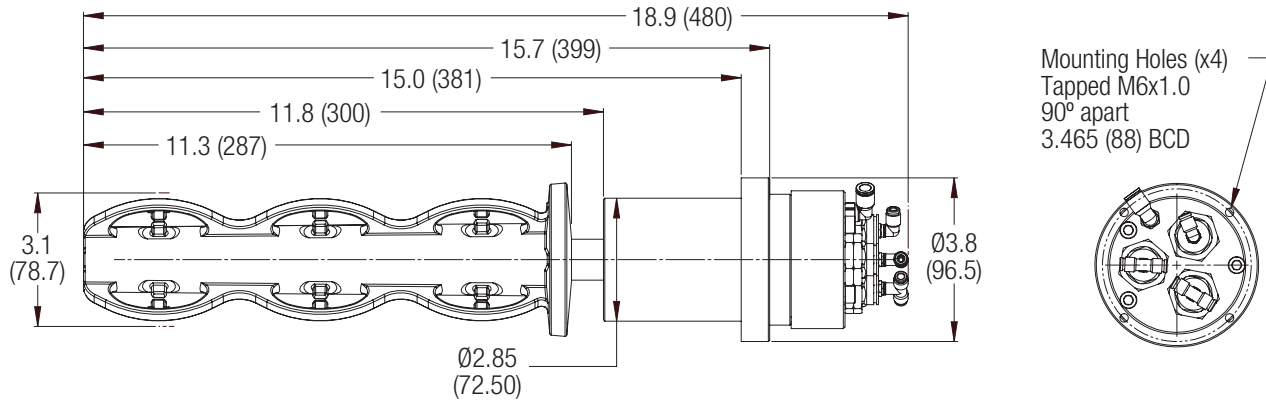
VCB-Series

Individual Tow Tension Creel Brakes

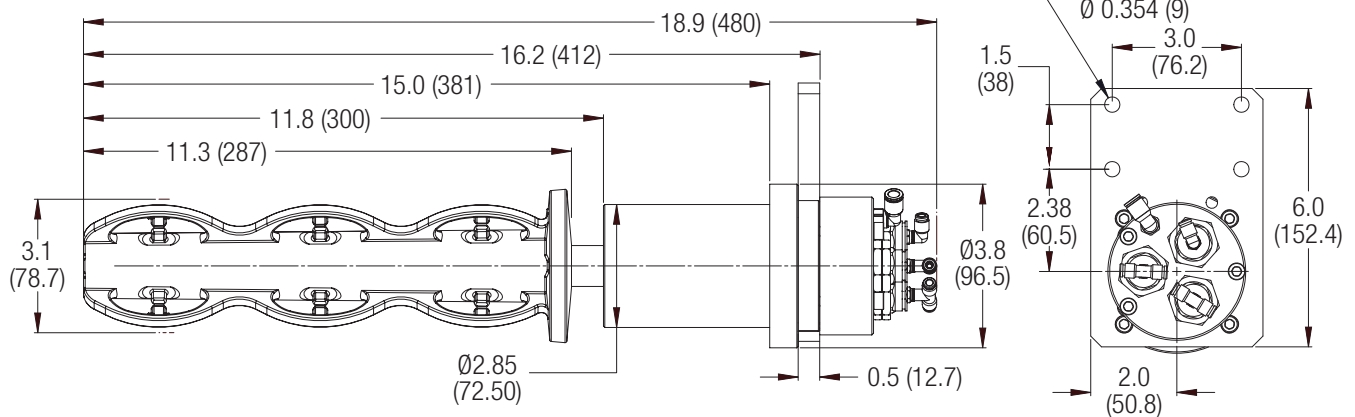


Dimensions

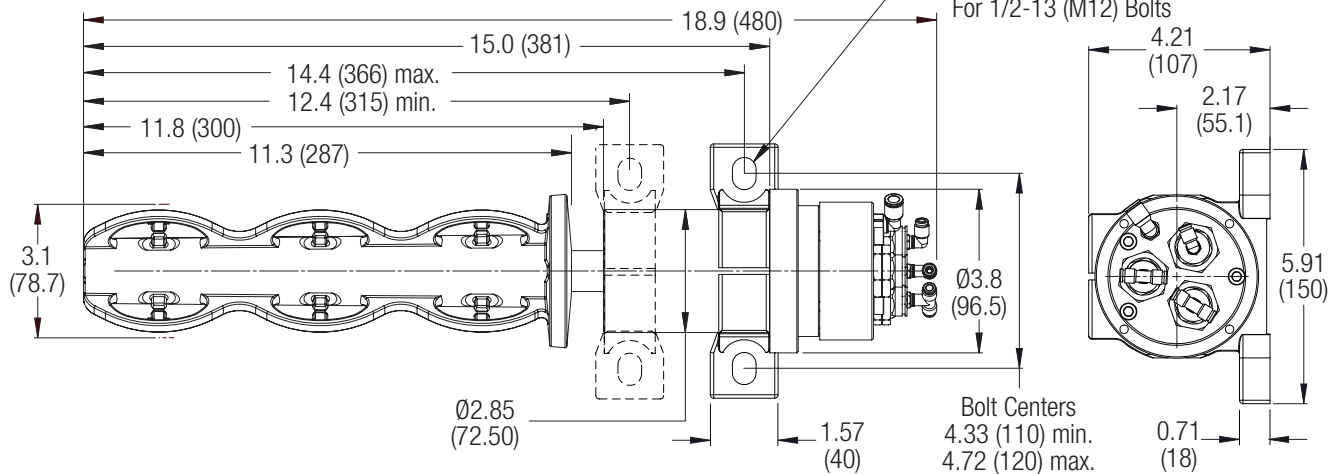
Shoulder Mount



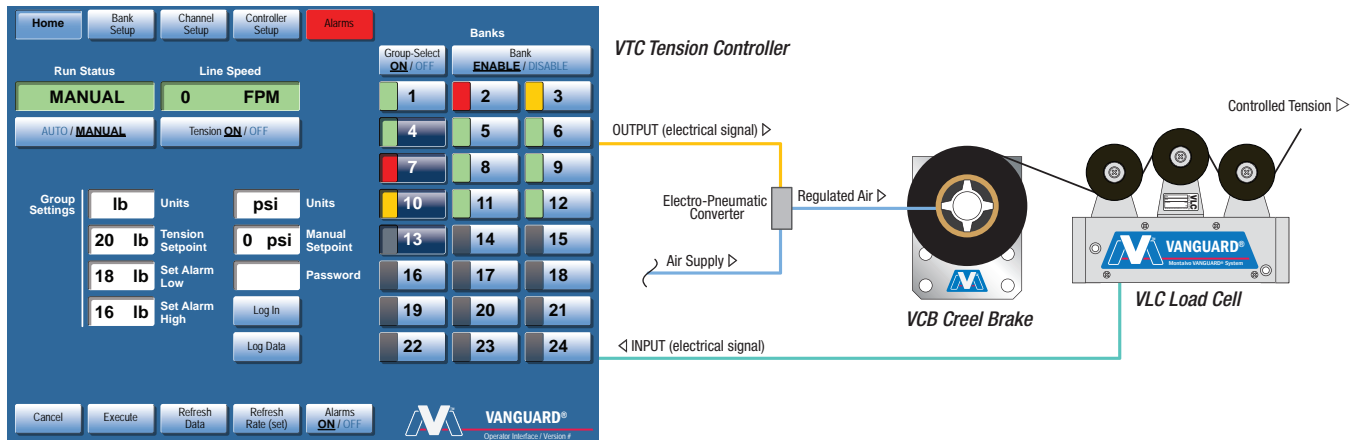
Bracket Mount



Pillow Block Mount



How It Works



Torque

Friction Material / COF	Teflon / Low		Carbon / Medium		Carbon / High	
	Max.	Min.	Max.	Min.	Max.	Min.
Air Supply psi (bar)	72 (5)	5 (0.3)	72 (5)	5 (0.3)	72 (5)	5 (0.3)
	in-lb (mN/m)					
1 Cylinder active	0.91 (103)	0.10 (11)	2.74 (310)	0.30 (34)	4.10 (463)	0.45 (51)
2 Cylinders active	1.64 (185)	0.12 (14)	4.92 (556)	0.35 (40)	7.39 (835)	0.52 (59)
3 Cylinders active	2.37 (268)	0.13 (15)	7.10 (802)	0.39 (44)	10.66 (1204)	0.59 (67)

Specifications

Air Supply Max.	72 psi (5 bar)
Core ID	3 in (76.2 mm)
Max. Torque of Core Holder	40 in-lb (4.5 Nm) @ core (cardboard)
Max. Package Weight	35 lb (16 kg)
Max. Operating Temperature	160°F (70°C)
Max. Speed	500 rpm
Weight - Disc/Shaft	0.4/2.4 lb (0.182/1.09 kg)
Weight - Brake Total	7 lb (3.18 kg)
Body Finish	Aluminum
Core Holder Material	Polypropylene



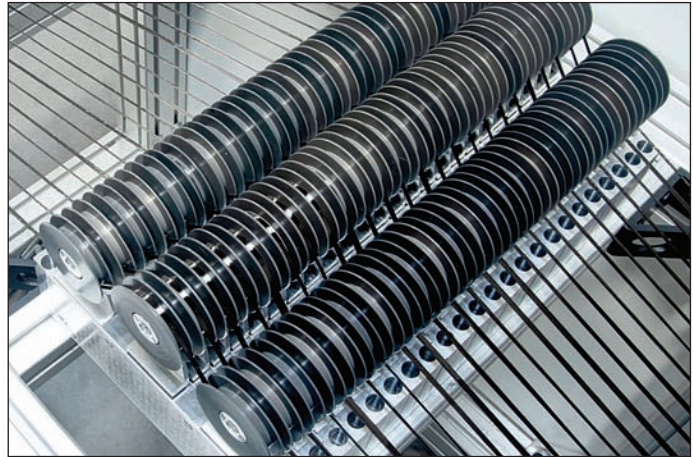
The Montalvo VANGUARD® System (MVS)

The patented VANGUARD® System is Montalvo's flagship closed loop tow and tape tension control technology system, leading the way in precise, uniform, consistent, automated tension control.

Tension Measurement (input)

Continuous, precise tension measurement directly from your tow. The VANGUARD Load Cells (VLC) feature Montalvo's industry-leading load cell technology for sensitivity, reliability, and repeatability.

- Wide Sensing Ranges – from 20g up to 10kg
- Pre-Calibrated (Just Install & Go)
- Built-In Amplifier for Easy Connection to Existing I/O
- High Overload Protection
- Precise Tension Measurement



Tension Control (process)

A single interface for automated control, indication, and data collection of every tow in your process. Montalvo's VANGUARD Tension Controller (VTC) is easy to set up and operate, automatically and precisely maintaining set tension from start to finish.

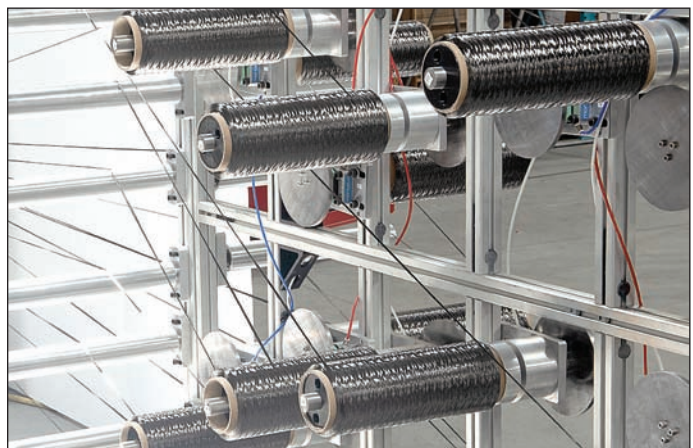
- Low/High Tension and Tow Break Alarms
- Pre-Configured for Your Application
- Single Interface for Managing Every Tow in Your Process
- Adjustable and Expandable Tow Counts



Torque Control (output)

Smooth, consistent, precise torque control for maximum process capability. Montalvo's VANGUARD Torque Control offers three different torque control options depending on the requirements of your application.

- Wide Torque Ranges and Tension Profiles Capable of a Wide Variety of Materials and Tensions
- Easy, Hassle-Free Installation
- Long-Lasting, High-Quality Performance
- Retrofit Capable – Upgrade Your Existing Creels



	207-856-2501 / 800-226-8710	
	+86-21-52188010	
	+45 75 57 27 11	
	+49 (0)511 760 691 41	



The Montalvo Corporation

EST. 1947



Better Web Control®

50 Hutcherson Drive, Gorham, Maine 04038 USA
Fax: 1-800-644-5097 / 207-856-2509

1-800-226-8710 / info@montalvo.com / www.montalvo.com
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