



## SAS CT-10000HS

10000N / 2250.0LBF CAPACITY

H-FRAME TWIN BALL SCREW COMPRESSION/EXTENSION

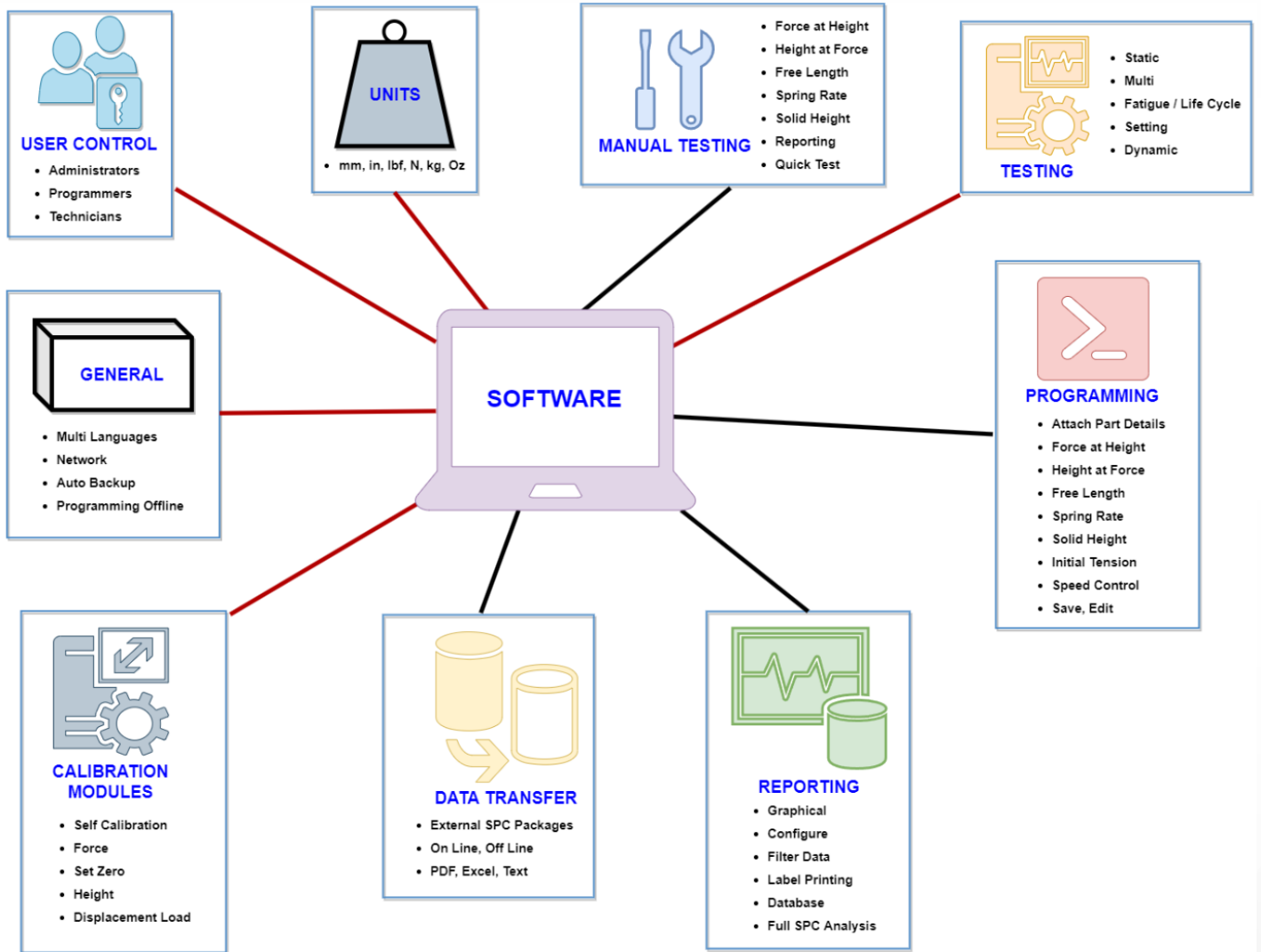
SPRING TESTER SERVO DRIVEN, PC CONTROLLED



SAS CT- H frame high speed/high-resolution series of testers offers three loadcell extreme offset capabilities. With the three load cells' extreme offset, the positioning of the spring on the platten is less critical for obtaining accurate and repeatable measurements.

## SPECIFICATIONS

Load	Recommended Load Capacity 10000N / 2250.0lbf Recommended Minimum test load 50N (11.21lbf) Load Resolution 0.20N (0.045lbf) Load Accuracy per ISO 7500 /1 Class 0.5 (0.5% of load, between 0.5% capacity up to full capacity) Continuous digital display or Force/Load height graphical analysis tools and display Safe overload to 150% of FS (compression and tension overload protection at 100% of FS load)
Stroke	Stroke 1000mm (40") Standard, 1500mm (60") Optional Resolution: 0.0002mm (0.000008") Accuracy: ±0.01mm (±0.0004")
Test Speeds	0.1mm/s – 50mm/s (0.25"/min – 120"/min)
Software Features	



## SPECIFICATIONS

Platten Diameter 300mm (11.8")

Computer Intel Dual Core (minimum) processor  
Serial or USB connection to PC for control and data transfer  
Fully Microsoft Windows 11 compatible  
Display 19" Monitor

Dimensional Measurement Software with 150mm Mitutoyo Caliper (Optional)

Add dimensional measurement to Spring Force Data on a single combined report.

SAS Inc. Spring Analysis Systems		CT90 Spring Analysis System Results report:		Customer: Order Number: Customer Address:	
Machine name:	121008	Department:		Operator:	Admin
No of springs per batch:	5	Part name:		Operator name:	
Type of spring:	Compression	Part number:		Coil spring number:	
Units:	N, mm			Revision:	
Load GW:	22.000 %				
Force:	0.002	0.044			
LSL:	0.000	0.042			
USL:	0.004	0.047			
No.	F1				
1-1	0.000	0.044			
1-2	0.000	0.047			
1-3	0.000	0.040			
1-4	0.000	0.040			
1-5	0.000	0.047			
2-1	0.000	0.040			
2-2	0.000	0.040			
2-3	0.000	0.040			
2-4	0.000	0.040			
2-5	0.000	0.040			
Min	0.000	0.040			
Max	0.000	0.047			
AVG	0.000	0.040			
MPG	0.000	0.040			
Stdv	0.000	0.000			
CPK	0.000	0.000			
+Tol	0	0			
-Tol	0	0			
ITol	19	19			

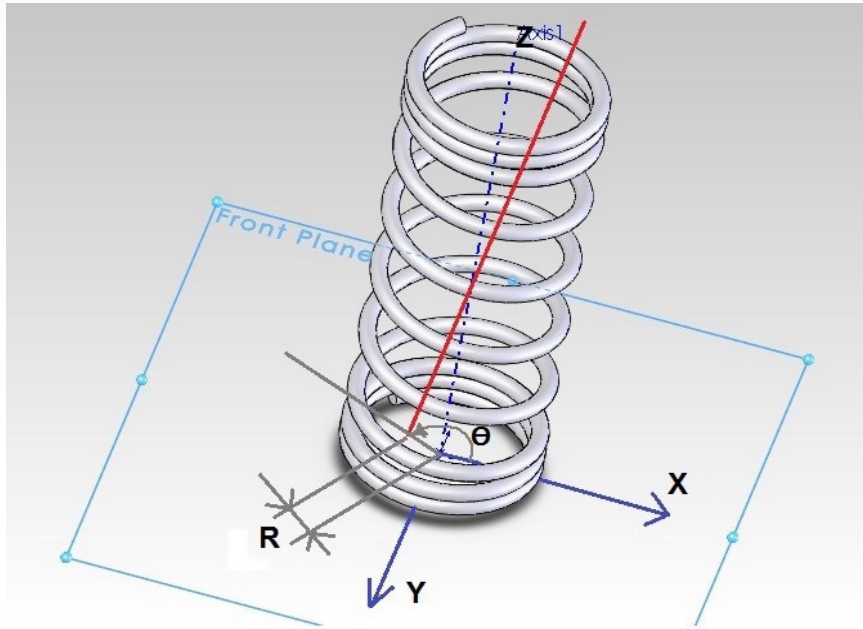
Buckling Prevention Pins and Fixtures (Optional)

Allows the safe testing of springs that are flimsy or tend to buckle.



## SPECIFICATIONS

Conductive Free Length (Optional)	Conductive Free Length (CFL) sensing utilizes a digital input connected directly to the servo controller to determine the spring free length by electrical conduction using a 3.5kHz sampling rate. When measured by CFL the results are independent of the spring rate which provides a highly accurate measurement at a 10X speed versus the standard force sensing method. The tested spring must be both electrically conductive and free of scale, oil, or dirt.
Load Vector Module (LVA) (Optional)	A module designed to measure side loads, in plane, and out of plane forces acting on a spring. Vector analysis of the Spring Forces.



### Forces Measured by LVA Unit

$F_n$	Axial Vertical Forces measured on standard loadcells
SULx	Force in the X in-plane direction.
SULy	Force in the Y in-plane direction.
SULr	Resultant force in the XY plane.
SULrp	XY plane vector pierce point as a radius from the part center (polar coordinate).
SUL $\theta$ p	XY plane angle to pierce point (polar coordinate – refer to SULrp).
SULxz	Angle of the force vector projected onto the XZ plane
SULyz	Angle of the force vector projected onto the YZ plane.

## SPECIFICATIONS

Dimensions	900 x 640 x 2010mm (35.4 x 25.2 x 79in) Weight 350 kg (770lbs)
Power	110V~220V AC 6A (Maximum) 3 phase 360-480VAC available



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 1945 Techny Road, Unit 5, Northbrook, IL 60062







## SAS CT-20000HS

20000N / 4500.0LBF CAPACITY

H-FRAME TWIN BALL SCREW COMPRESSION/EXTENSION

SPRING TESTER SERVO DRIVEN, PC CONTROLLED

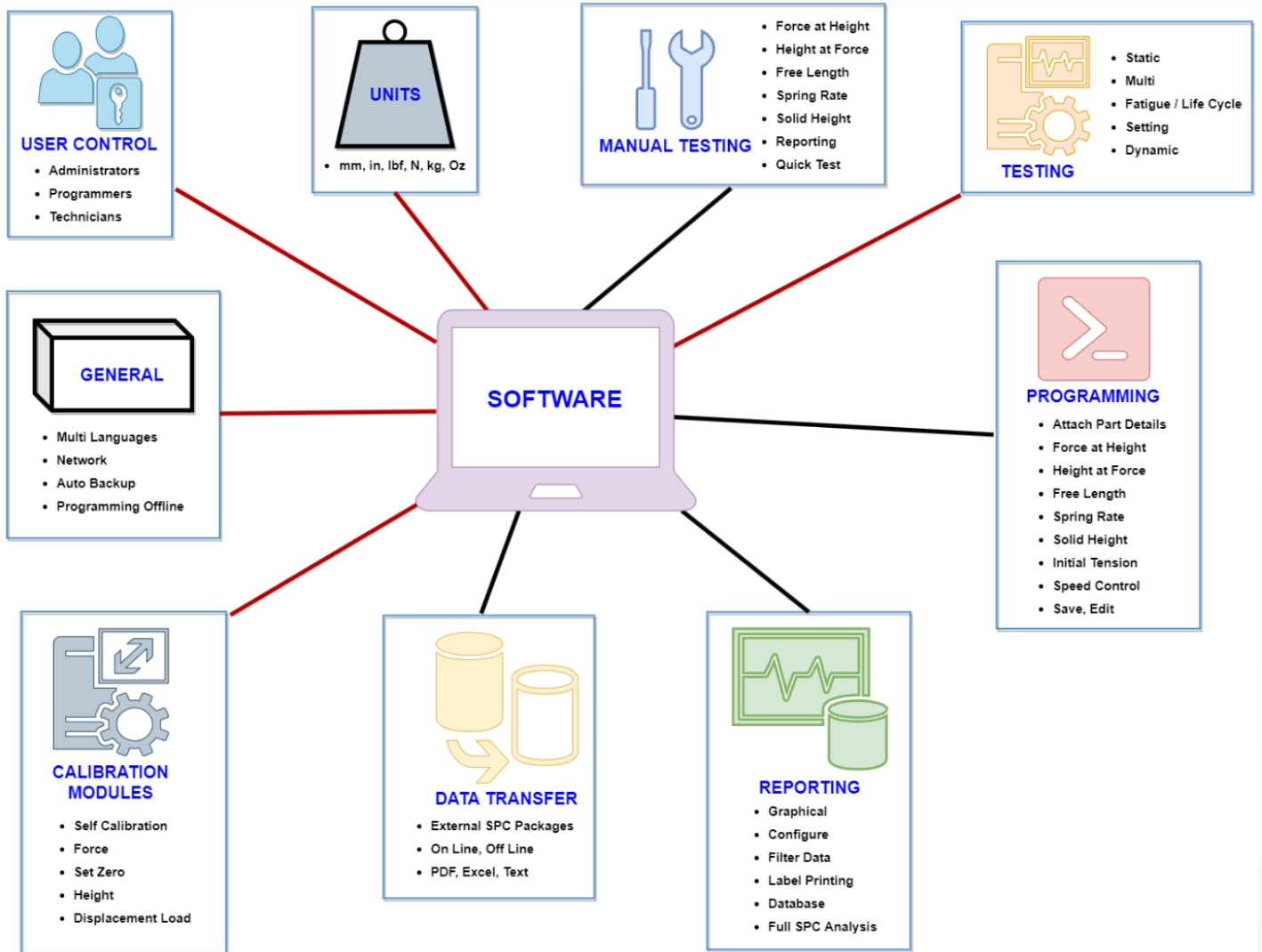


SAS CT- H frame high speed/high-resolution series of testers offers three loadcell extreme offset capabilities. With the three load cells' extreme offset, the positioning of the spring on the platten is less critical for obtaining accurate and repeatable measurements.

## SPECIFICATIONS

Load	<p>Recommended Load Capacity 20000N / 4500.0lbf</p> <p>Recommended Minimum test load 100N (22.42lbf)</p> <p>Load Resolution 0.40N (0.09lbf)</p> <p>Load Accuracy per ISO 7500 /1 Class 0.5 (0.5% of load, between 0.5% capacity up to full capacity)</p> <p>Continuous digital display or Force/Load height graphical analysis tools and display</p> <p>Safe overload to 150% of FS (compression and tension overload protection at 100% of FS load)</p>
Stroke	<p>Stroke 1000mm (40") Standard, 1500mm (60") Optional</p> <p>Resolution: 0.0002mm (0.000008")</p> <p>Accuracy: ±0.01mm (±0.0004")</p>
Test Speeds	0.1mm/s – 50mm/s (0.25"/min – 120"/min)

### Software Features



## SPECIFICATIONS

Platten Diameter	300mm (11.8")
Computer	Intel Dual Core (minimum) processor Serial or USB connection to PC for control and data transfer Fully Microsoft Windows 11 compatible Display 19" Monitor

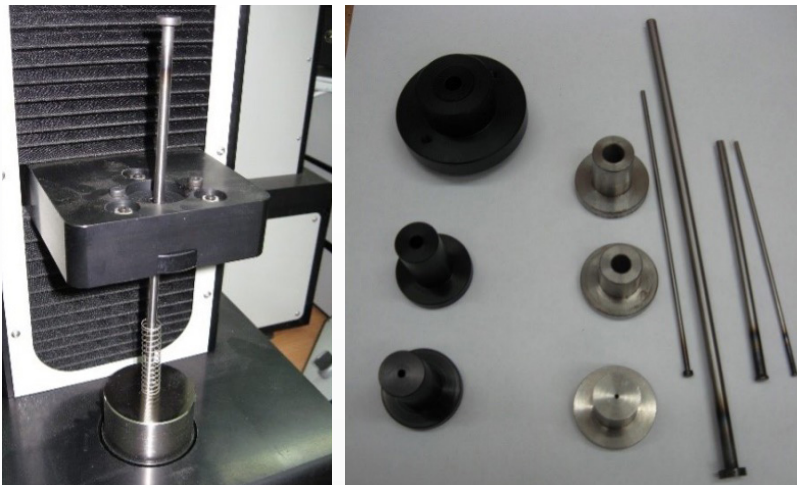
Dimensional Measurement Software with 150mm Mitutoyo Caliper (Optional)

Add dimensional measurement to Spring Force Data on a single combined report.

SAS Inc. Spring Analysis Systems		CTS Spring Analysis System Results report		Customer: Order Number: Customer Address:	
Machine name:	121008	Department:		Operator:	Admin
No. of springs per batch:	5	Part name:		Operator name:	
Type of spring:	Compression	Part number:		Coil spring number:	
Units:	N, mm	Part name:		Part name:	
Load GW:	22.000%				
Force:	0.002	0.004			
LSL:	0.000	0.002			
USL:	0.004	0.007			
No.	F1	F2			
1-1	0.000	0.004			
1-2	0.000	0.007			
1-3	0.000	0.000			
1-4	0.000	0.000			
1-5	0.000	0.007			
2-1	0.000	0.000			
2-2	0.000	0.000			
2-3	0.000	0.000			
2-4	0.000	0.000			
2-5	0.000	0.000			
Min	0.000	0.000			
Max	0.000	0.007			
AVG	0.000	0.000			
MPG	0.000	0.000			
Stdv	0.000	0.000			
CPK	0.000	0.000			
+Tol	0	0			
-Tol	0	0			
ITol	0	0			

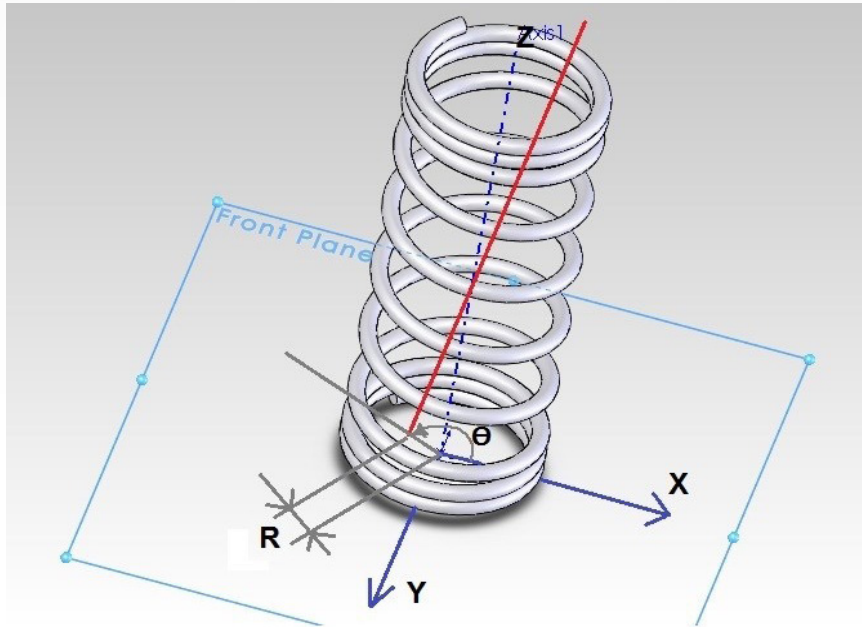
Buckling Prevention Pins and Fixtures (Optional)

Allows the safe testing of springs that are flimsy or tend to buckle.



## SPECIFICATIONS

Conductive Free Length (Optional)	Conductive Free Length (CFL) sensing utilizes a digital input connected directly to the servo controller to determine the spring free length by electrical conduction using a 3.5kHz sampling rate. When measured by CFL the results are independent of the spring rate which provides a highly accurate measurement at a 10X speed versus the standard force sensing method. The tested spring must be both electrically conductive and free of scale, oil, or dirt.
Load Vector Module (LVA) (Optional)	A module designed to measure side loads, in plane, and out of plane forces acting on a spring. Vector analysis of the Spring Forces.



### Forces Measured by LVA Unit

$F_n$	Axial Vertical Forces measured on standard loadcells
SULx	Force in the X in-plane direction.
SULy	Force in the Y in-plane direction.
SULr	Resultant force in the XY plane.
SULrp	XY plane vector pierce point as a radius from the part center (polar coordinate).
SUL $\theta$ p	XY plane angle to pierce point (polar coordinate – refer to SULrp).
SULxz	Angle of the force vector projected onto the XZ plane
SULyz	Angle of the force vector projected onto the YZ plane.

## SPECIFICATIONS

Dimensions	900 x 640 x 2010mm (35.4 x 25.2 x 79in) Weight 350 kg (770lbs)
Power	110V~220V AC 6A (Maximum) 3 phase 360-480VAC available



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## SAS CT-30000HS

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30000N / 6750.0LBF CAPACITY

H-FRAME TWIN BALL SCREW COMPRESSION/EXTENSION

SPRING TESTER SERVO DRIVEN, PC CONTROLLED

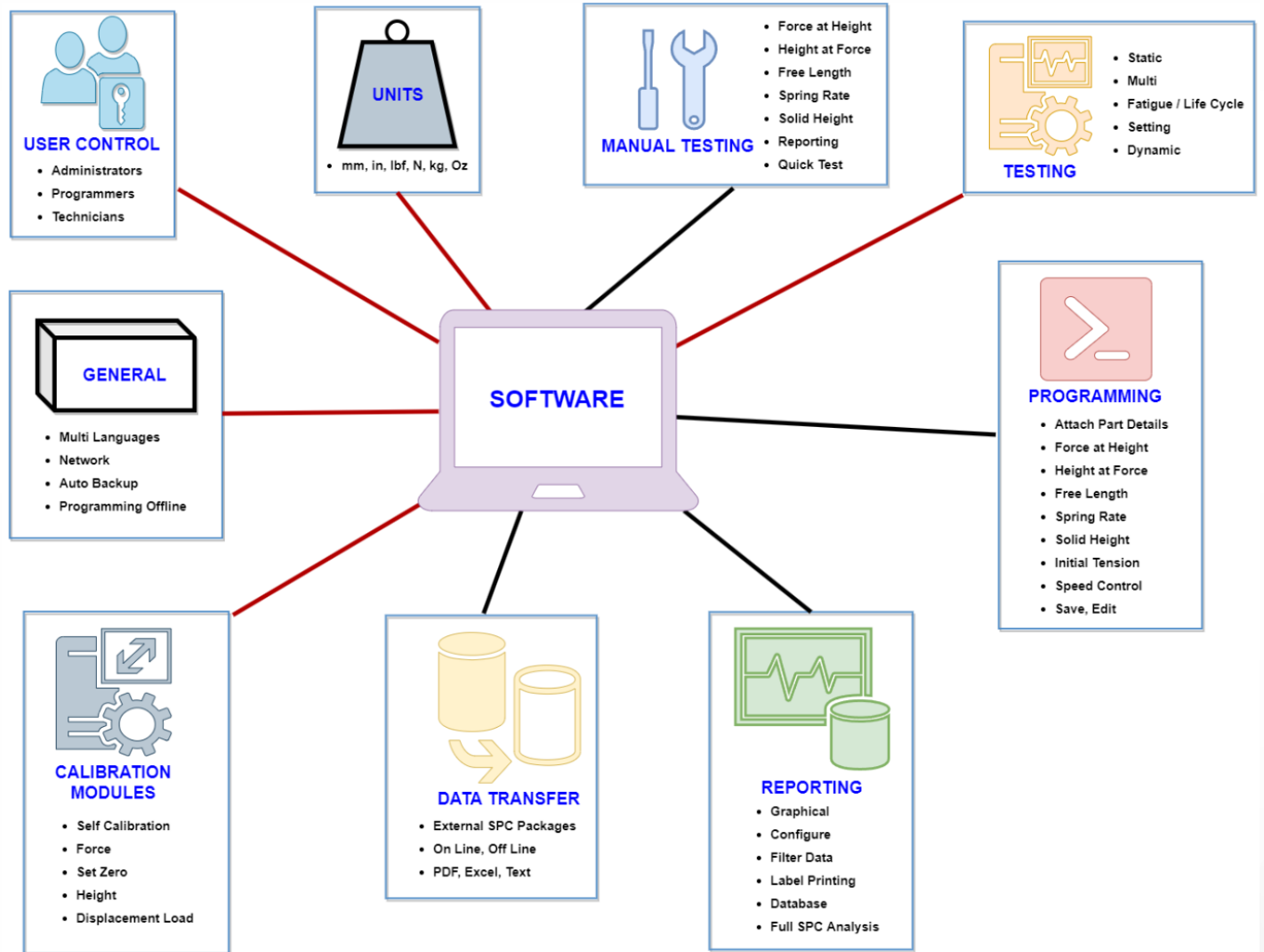


SAS CT- H frame high speed/high-resolution series of testers offers three loadcell extreme offset capabilities. With the three load cells' extreme offset, the positioning of the spring on the platten is less critical for obtaining accurate and repeatable measurements.

## SPECIFICATIONS

Load	<p>Recommended Load Capacity 30000N / 6750.0lbf</p> <p>Recommended Minimum test load 150N (33.63lbf)</p> <p>Load Resolution 0.60N (0.135lbf)</p> <p>Load Accuracy per ISO 7500 /1 Class 0.5 (0.5% of load, between 0.5% capacity up to full capacity)</p> <p>Continuous digital display or Force/Load height graphical analysis tools and display</p> <p>Safe overload to 150% of FS (compression and tension overload protection at 100% of FS load)</p>
Stroke	<p>Stroke 1000mm (40") Standard, 1500mm (60") Optional</p> <p>Resolution: 0.0002mm (0.000008")</p> <p>Accuracy: ±0.01mm (±0.0004")</p>
Test Speeds	<p>0.1mm/s – 50mm/s (0.25"/min – 120"/min)</p>

### Software Features



## SPECIFICATIONS

Platten Diameter 300mm (11.8")

Computer Intel Dual Core (minimum) processor  
Serial or USB connection to PC for control and data transfer  
Fully Microsoft Windows 11 compatible  
Display 19" Monitor

Dimensional Measurement Software with 150mm Mitutoyo Caliper (Optional)

Add dimensional measurement to Spring Force Data on a single combined report.

SAS Inc. Spring Analysis Systems		CT90 Spring Analysis System Results report:		Customer: Order Number: Customer Address:	
Machine name:	121008	Department:		Operator:	Admin
No of springs per batch:	5	Part name:		Operator name:	
Type of spring:	Compression	Part number:		Coil spring number:	
Units:	N, mm			Revision:	
Load GW:	22.000 %				
Force:	0.002	0.044			
LSL:	0.000	0.042			
USL:	0.004	0.047			
No.	F1				
1-1	0.000	0.044			
1-2	0.000	0.047			
1-3	0.000	0.040			
1-4	0.000	0.040			
1-5	0.000	0.047			
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2-2	0.000	0.040			
2-3	0.000	0.040			
2-4	0.000	0.040			
2-5	0.000	0.040			
Min	0.000	0.040			
Max	0.000	0.047			
AVG	0.000	0.040			
MPG	0.000	0.040			
Stdv	0.000	0.000			
CPK	0.000	0.000			
+Tol	0	0			
-Tol	0	0			
ITol	19	19			

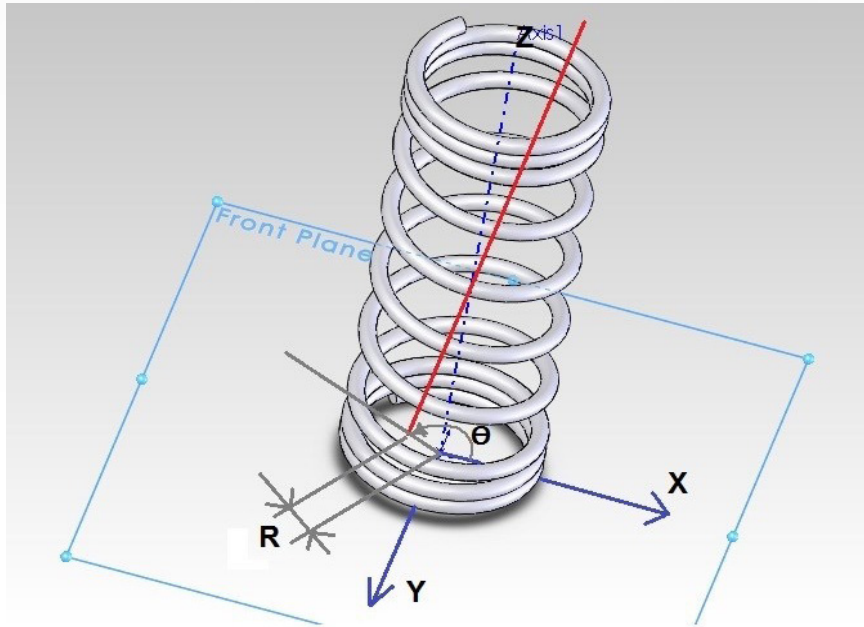
Buckling Prevention Pins and Fixtures (Optional)

Allows the safe testing of springs that are flimsy or tend to buckle.



## SPECIFICATIONS

Conductive Free Length (Optional)	Conductive Free Length (CFL) sensing utilizes a digital input connected directly to the servo controller to determine the spring free length by electrical conduction using a 3.5kHz sampling rate. When measured by CFL the results are independent of the spring rate which provides a highly accurate measurement at a 10X speed versus the standard force sensing method. The tested spring must be both electrically conductive and free of scale, oil, or dirt.
Load Vector Module (LVA) (Optional)	A module designed to measure side loads, in plane, and out of plane forces acting on a spring. Vector analysis of the Spring Forces.



### Forces Measured by LVA Unit

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SULrp	XY plane vector pierce point as a radius from the part center (polar coordinate).
SUL $\theta$ p	XY plane angle to pierce point (polar coordinate – refer to SULrp).
SULxz	Angle of the force vector projected onto the XZ plane
SULyz	Angle of the force vector projected onto the YZ plane.

## SPECIFICATIONS

Dimensions	900 x 640 x 2010mm (35.4 x 25.2 x 79in) Weight 350 kg (770lbs)
Power	360-480V AC 3phase 16A (Maximum per phase)



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## SAS CT-50000HS

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50000N (11200.0LBF) CAPACITY

H-FRAME TWIN OR QUAD BALL SCREW COMPRESSION/EXTENSION

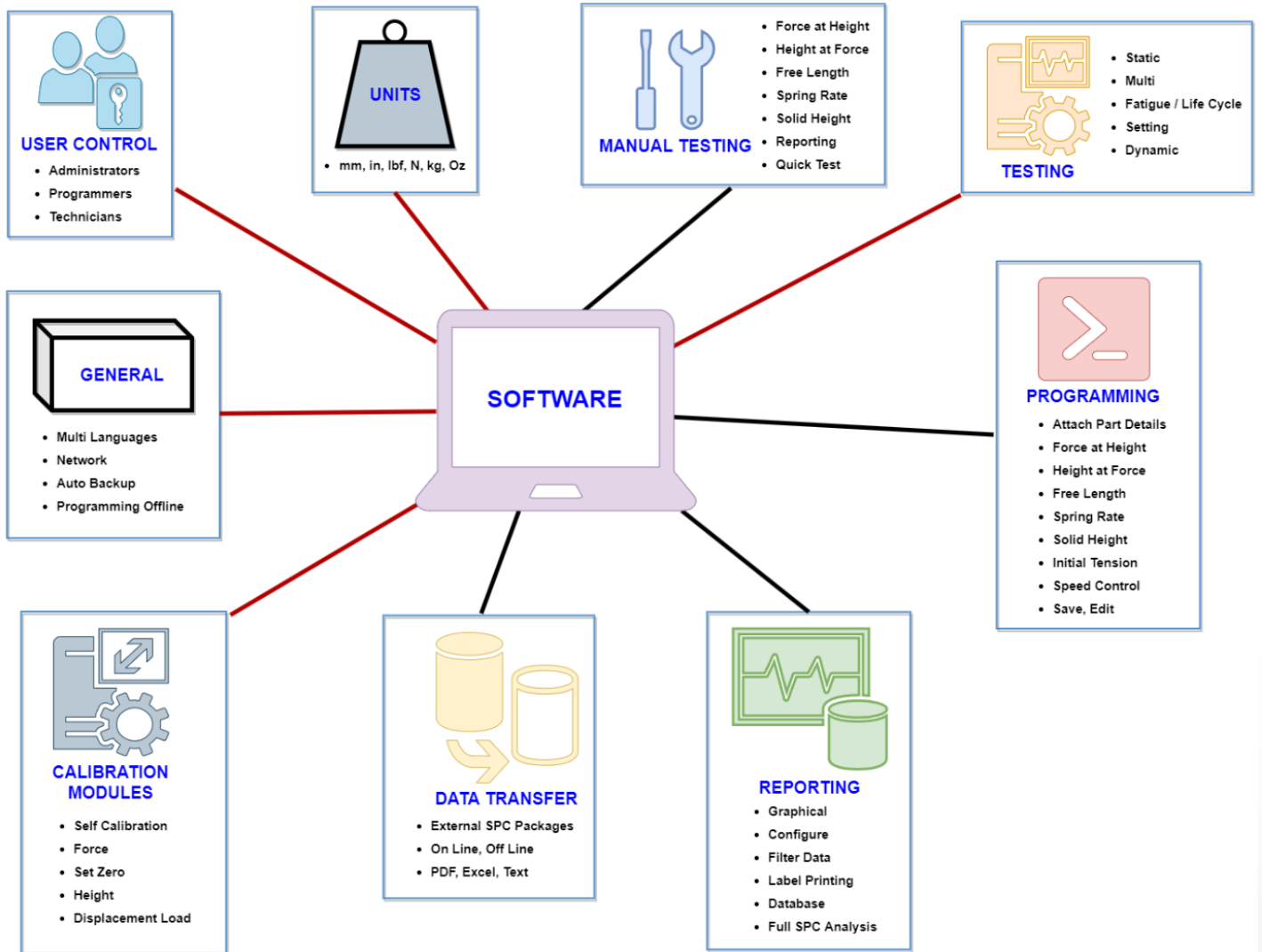
SPRING TESTER SERVO DRIVEN, PC CONTROLLED



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## SPECIFICATIONS

Load	<p>Recommended Load Capacity 50000N (11200.0lbf)</p> <p>Recommended Minimum test load 250N (56.0lbf)</p> <p>Load Resolution 1.00N (0.224lbf)</p> <p>Load Accuracy per ISO 7500 /1 Class 0.5 (0.5% of load, between 0.5% capacity up to full capacity)</p> <p>Continuous digital display or Force/Load height graphical analysis tools and display</p> <p>Safe overload to 150% of FS (compression and tension overload protection at 100% of FS load)</p>
Stroke	<p>Stroke 1000mm (40") Standard, 1500mm (60") Optional</p> <p>Resolution: 0.016mm (0.0008")</p> <p>Accuracy: ±0.05mm (±0.002")</p>
Test Speeds	.01mm-25mm/s (.25"/min-60"/min)
Software Features	



## SPECIFICATIONS

Platten Diameter	Dual: 300mm (11.8") Quad: 400mm (16")
Computer	Intel Dual Core (minimum) processor Serial or USB connection to PC for control and data transfer Fully Microsoft Windows 11 compatible Display 19" Monitor

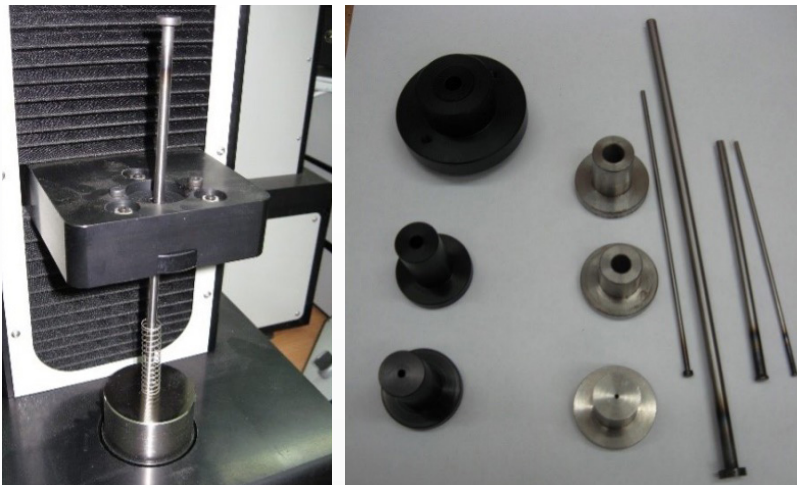
Dimensional Measurement Software with 150mm Mitutoyo Caliper (Optional)

Add dimensional measurement to Spring Force Data on a single combined report.

SAS Inc. Spring Analysis Systems		CT50 Spring Analysis System Results report:		Customer: Order Number: Customer Address:	
Machine name:	121008	Department:		Operator:	Admin
No. of springs per batch:	5	Part name:		Operator name:	
Type of spring:	Compression	Part number:		Coil spring number:	
Units:	N, mm	Part name:		Revision:	
Load GW:	22.000 %				
Force:	0.002	0.044			
LSL:	0.000	0.042			
USL:	0.004	0.047			
No.	F1	F2	F3	F4	F5
1-1	0.000	0.044			
1-2	0.000	0.047			
1-3	0.000	0.040			
1-4	0.000	0.040			
1-5	0.000	0.047			
2-1	0.000	0.040			
2-2	0.000	0.040			
2-3	0.000	0.040			
2-4	0.000	0.040			
2-5	0.000	0.040			
Min	0.000	0.040			
Max	0.000	0.047			
AVG	0.000	0.040			
MPG	0.000	0.040			
SD	0.000	0.000			
CPK	0.000	0.000			
+Tol	0	0			
-Tol	0	0			
ITol	0	0			

Buckling Prevention Pins and Fixtures (Optional)

Allows the safe testing of springs that are flimsy or tend to buckle.



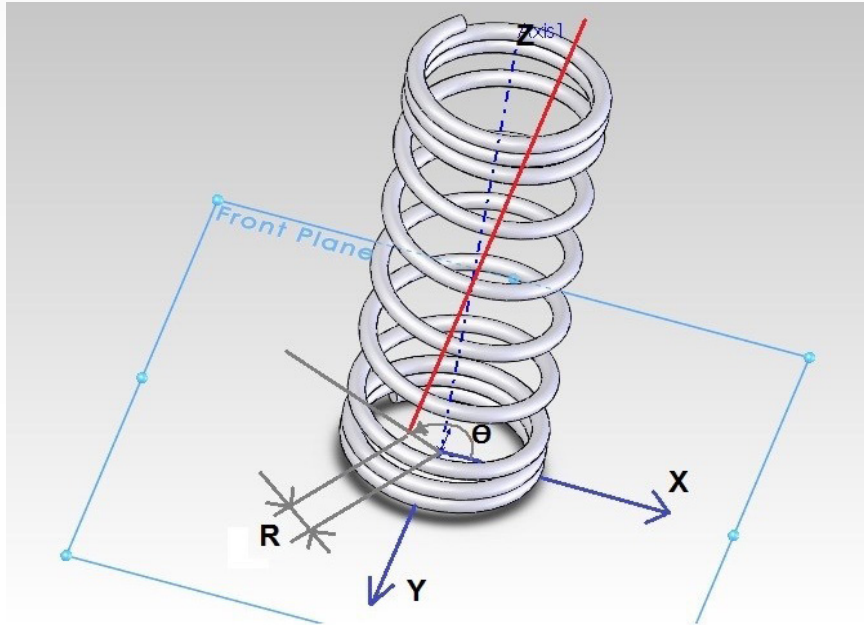
## SPECIFICATIONS

Conductive Free Length (Optional)

Conductive Free Length (CFL) sensing utilizes a digital input connected directly to the servo controller to determine the spring free length by electrical conduction using a 3.5kHz sampling rate. When measured by CFL the results are independent of the spring rate which provides a highly accurate measurement at a 10X speed versus the standard force sensing method. The tested spring must be both electrically conductive and free of scale, oil, or dirt.

Load Vector Module (LVA) (Optional)

A module designed to measure side loads, in plane, and out of plane forces acting on a spring. Vector analysis of the Spring Forces.



### Forces Measured by LVA Unit

$F_n$	Axial Vertical Forces measured on standard loadcells
SULx	Force in the X in-plane direction.
SULy	Force in the Y in-plane direction.
SULr	Resultant force in the XY plane.
SULrp	XY plane vector pierce point as a radius from the part center (polar coordinate).
SUL $\theta$ p	XY plane angle to pierce point (polar coordinate – refer to SULrp).
SULxz	Angle of the force vector projected onto the XZ plane
SULyz	Angle of the force vector projected onto the YZ plane.

## SPECIFICATIONS

	DUAL BALLSCREW	QUAD BALLSCREW
Dimensions	1000 x 740 x 2010mm (40 x 29.1 x 79in)	1000 x 740 x 2010mm (40 x 29.1 x 79in)
	Weight 800 kg (1760lbs)	Weight 1200 kg (2640lbs)
Power	360-480V AC 3phase 16A (Maximum per phase)	



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## SAS CT-100000HS

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100000N / 22500.0LBF CAPACITY

H-FRAME TWIN OR QUAD BALL SCREW COMPRESSION/EXTENSION

SPRING TESTER SERVO DRIVEN, PC CONTROLLED

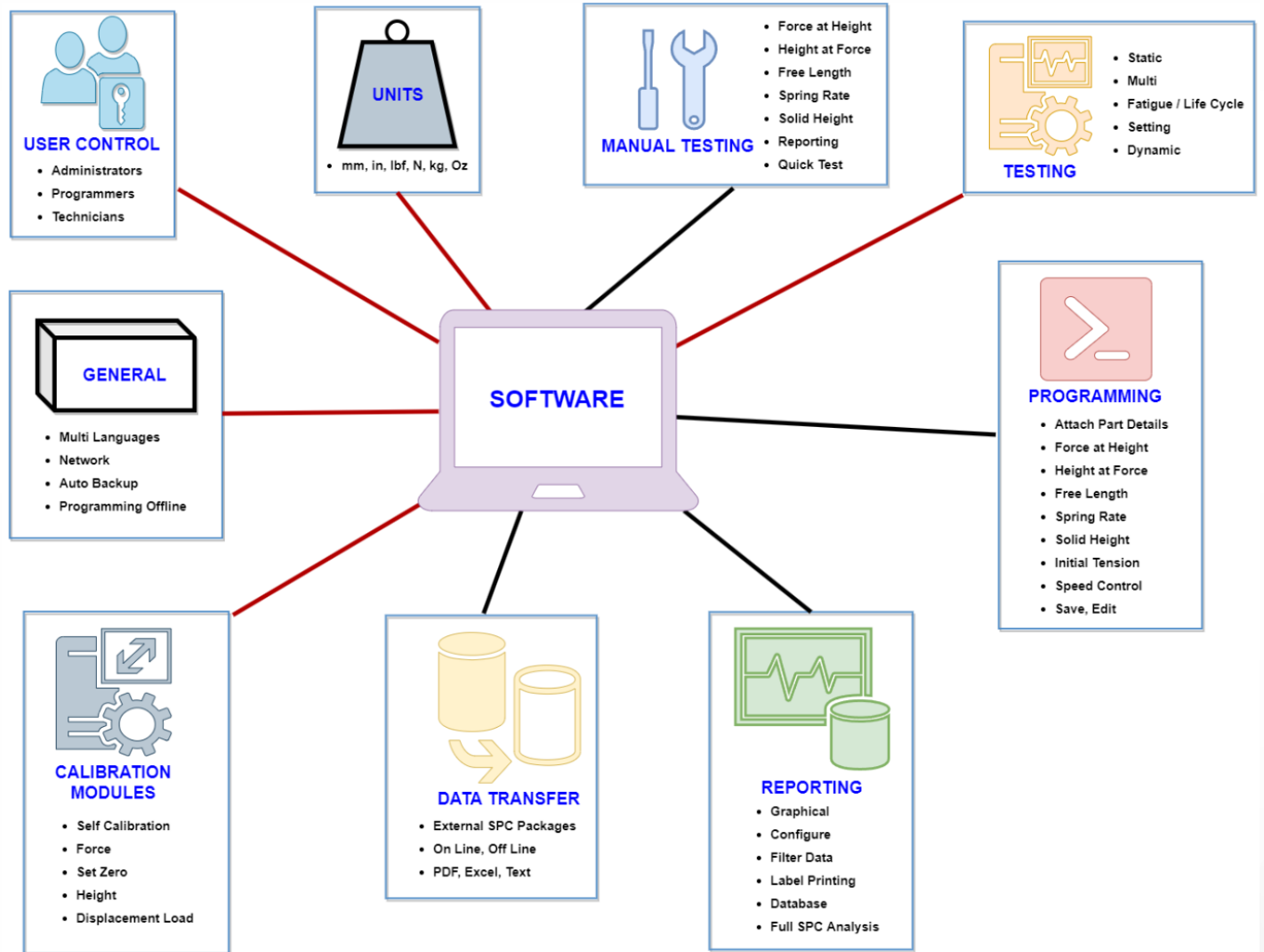


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## SPECIFICATIONS

Load	Recommended Load Capacity 100000N / 22500.0lbf Recommended Minimum test load 500N (112.5lbf) Load Resolution 2.0N (0.450lbf) Load Accuracy per ISO 7500 /1 Class 0.5 (0.5% of load, between 0.5% capacity up to full capacity) Continuous digital display or Force/Load height graphical analysis tools and display Safe overload to 150% of FS (compression and tension overload protection at 100% of FS load)
Stroke	Stroke 1000mm (40") Standard, 1500mm (60") Optional, 2000mm (80") Optional Resolution: 0.000002mm (0.0000008") Accuracy: ±0.01mm (±0.00039")
Test Speeds	.01mm-25mm/s (.25"/min-60"/min)

### Software Features



## SPECIFICATIONS

Platten Diameter	Dual: 300mm (11.8") Quad: 400mm (16")
Computer	Intel Dual Core (minimum) processor Serial or USB connection to PC for control and data transfer Fully Microsoft Windows 11 compatible Display 19" Monitor

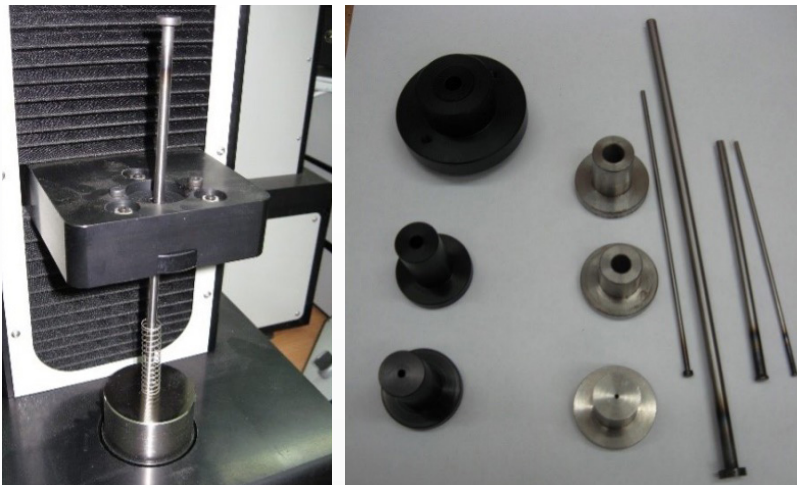
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Machine name:	121008	Department:		Operator:	Admin
No. of springs per batch:	5	Part name:		Operator name:	
Type of spring:	Compression	Part number:		Coil spring number:	
Units:	N, mm	Part name:		Revision:	
Load GW:	22.000 %				
Force:	0.002	0.044			
LSL:	0.000	0.042			
USL:	0.004	0.047			
No.	F1				
1-1	0.000	0.044			
1-2	0.000	0.047			
1-3	0.000	0.040			
1-4	0.000	0.040			
1-5	0.000	0.047			
2-1	0.000	0.040			
2-2	0.000	0.040			
2-3	0.000	0.040			
2-4	0.000	0.040			
2-5	0.000	0.040			
Min	0.000	0.040			
Max	0.000	0.047			
AVG	0.000	0.040			
MPG	0.000	0.040			
SDP	0.000	0.000			
CPK	0.000	0.000			
+Tol	0	0			
-Tol	0	0			
ITol	19	19			

Buckling Prevention Pins and Fixtures (Optional)

Allows the safe testing of springs that are flimsy or tend to buckle.



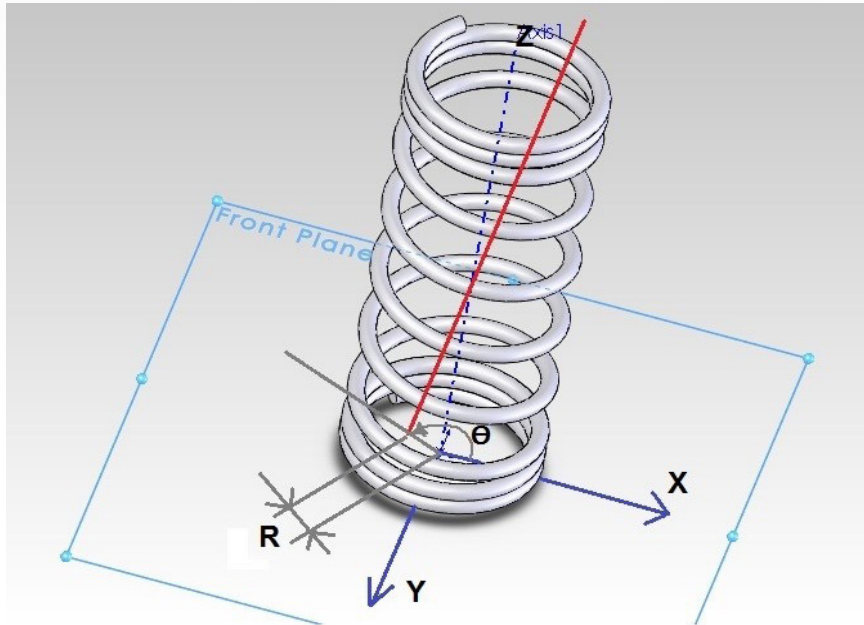
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A module designed to measure side loads, in plane, and out of plane forces acting on a spring. Vector analysis of the Spring Forces.



### Forces Measured by LVA Unit

- Fn** Axial Vertical Forces measured on standard loadcells
- SULx** Force in the X in-plane direction.
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- SULr** Resultant force in the XY plane.
- SULrp** XY plane vector pierce point as a radius from the part center (polar coordinate).
- SULθp** XY plane angle to pierce point (polar coordinate – refer to SULrp).
- SULxz** Angle of the force vector projected onto the XZ plane
- SULyz** Angle of the force vector projected onto the YZ plane.

## SPECIFICATIONS

	DUAL BALLSCREW	QUAD BALLSCREW
Dimensions	1000 x 740 x 2010mm (40 x 29.1 x 79in) Weight 1200 kg (2640lbs)	1000 x 740 x 2010mm (40 x 29.1 x 79in) Weight 1200 kg (2640lbs)
Power	360-480V AC 3phase 16A (Maximum per phase)	



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## SAS CT-20000HS

200000N / 45000.0LBF CAPACITY

H-FRAME TWIN OR QUAD BALL SCREW COMPRESSION/EXTENSION

SPRING TESTER SERVO DRIVEN, PC CONTROLLED

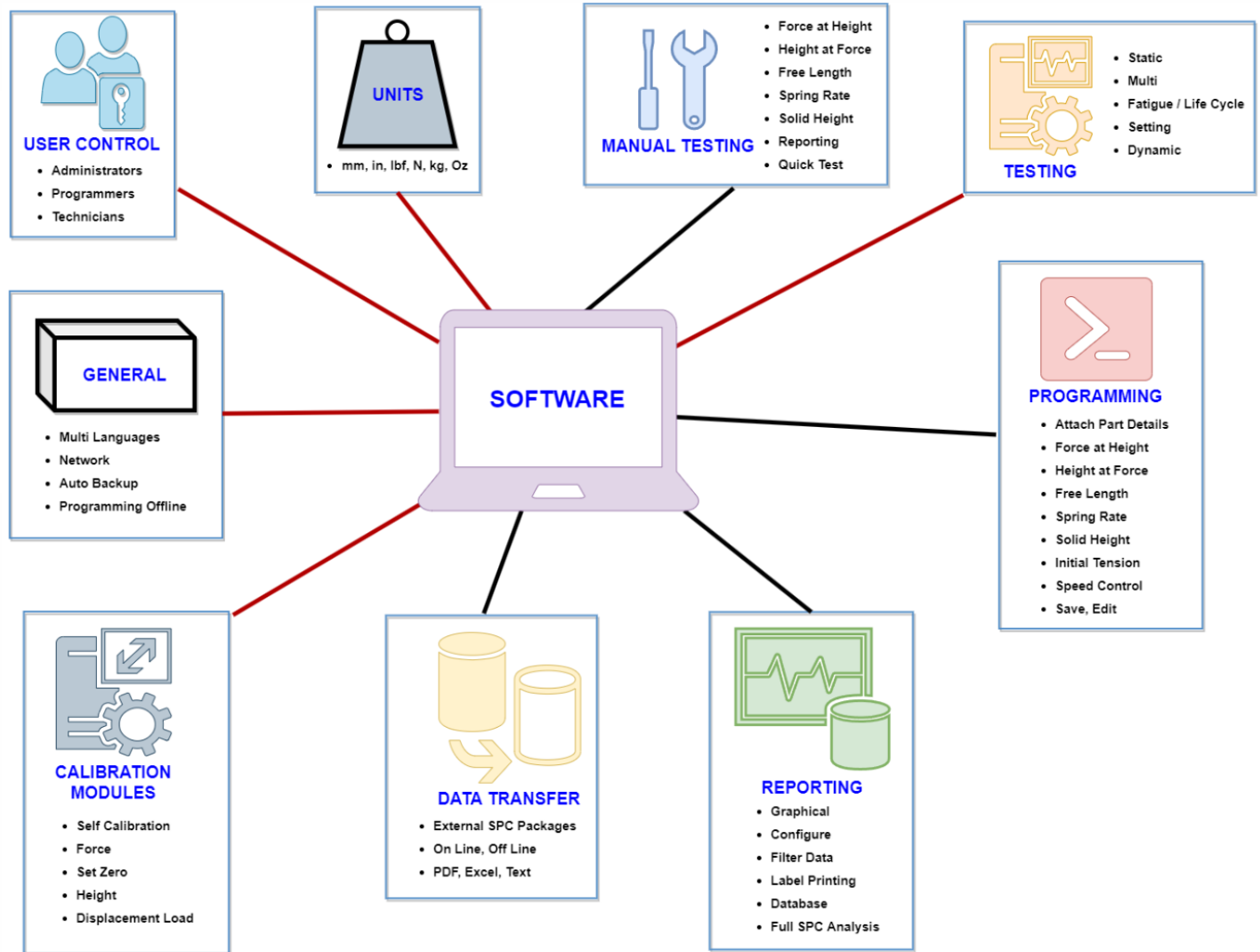


SAS CT- H frame high speed/high-resolution series of testers offers three loadcell extreme offset capabilities. With the three load cells' extreme offset, the positioning of the spring on the platten is less critical for obtaining accurate and repeatable measurements.

## SPECIFICATIONS

Load	<p>Recommended Load Capacity 200000N / 45000.0lbf</p> <p>Recommended Minimum test load 1000N (224.2lbf)</p> <p>Load Resolution 4.00N (0.90lbf)</p> <p>Load Accuracy per ISO 7500 /1 Class 0.5 (0.5% of load, between 0.5% capacity up to full capacity)</p> <p>Continuous digital display or Force/Load height graphical analysis tools and display</p> <p>Safe overload to 150% of FS (compression and tension overload protection at 100% of FS load)</p>
Stroke	<p>Stroke 1000mm (40") Standard, 1500mm (60") Optional, 2000mm (80") Optional</p> <p>Resolution: 0.000002mm (0.0000008")</p> <p>Accuracy: ±0.01mm (±0.00039")</p>
Test Speeds	0.1mm/s – 15mm/s (0.25"/min – 35.5"/min)

### Software Features



## SPECIFICATIONS

Platten Diameter	Dual: 300mm (11.8") Quad: 400mm (16")
Computer	Intel Dual Core (minimum) processor Serial or USB connection to PC for control and data transfer Fully Microsoft Windows 11 compatible Display 19" Monitor

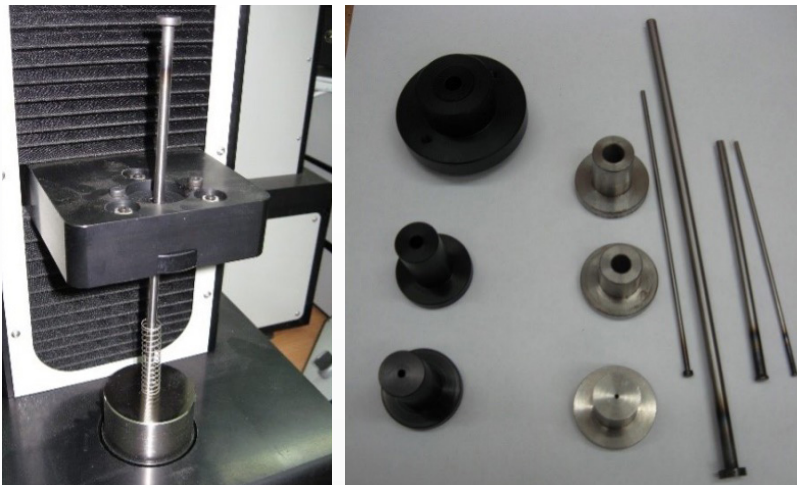
Dimensional Measurement Software with 150mm Mitutoyo Caliper (Optional)

Add dimensional measurement to Spring Force Data on a single combined report.

SAS Inc. Spring Analysis Systems		CT50 Spring Analysis System Results report:		Customer: Order Number: Customer Address:	
Machine name:	141008	Department:		Operator:	Admin
No. of springs per batch:	5	Part name:		Operator name:	
Type of spring:	Compression	Part number:		Coil spring number:	
Units:	N, mm			Revision:	
Load GW:	22.000 %				
Force:	0.002	0.044			
LSL:	0.000	0.042			
USL:	0.004	0.047			
No.	F1				
1-1	0.000	0.044			
1-2	0.000	0.047			
1-3	0.000	0.040			
1-4	0.000	0.040			
1-5	0.000	0.047			
2-1	0.000	0.040			
2-2	0.000	0.040			
2-3	0.000	0.040			
2-4	0.000	0.040			
2-5	0.000	0.040			
Min	0.000	0.040			
Max	0.000	0.047			
AVG	0.000	0.040			
MPG	0.000	0.040			
SD	0.000	0.000			
CPK	0.000	0.000			
+Tol	0	0			
-Tol	0	0			
ITol	0	0			

Buckling Prevention Pins and Fixtures (Optional)

Allows the safe testing of springs that are flimsy or tend to buckle.



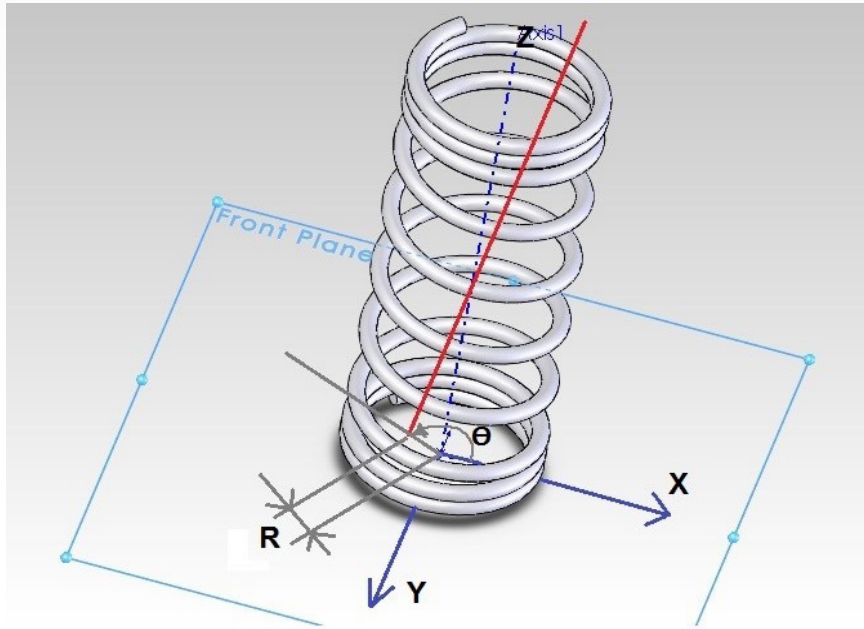
## SPECIFICATIONS

Conductive Free Length (Optional)

Conductive Free Length (CFL) sensing utilizes a digital input connected directly to the servo controller to determine the spring free length by electrical conduction using a 3.5kHz sampling rate. When measured by CFL the results are independent of the spring rate which provides a highly accurate measurement at a 10X speed versus the standard force sensing method. The tested spring must be both electrically conductive and free of scale, oil, or dirt.

Load Vector Module (LVA) (Optional)

A module designed to measure side loads, in plane, and out of plane forces acting on a spring. Vector analysis of the Spring Forces.



### Forces Measured by LVA Unit

- F<sub>n</sub>** Axial Vertical Forces measured on standard loadcells
- SUL<sub>x</sub>** Force in the X in-plane direction.
- SUL<sub>y</sub>** Force in the Y in-plane direction.
- SUL<sub>r</sub>** Resultant force in the XY plane.
- SUL<sub>rp</sub>** XY plane vector pierce point as a radius from the part center (polar coordinate).
- SUL<sub>θp</sub>** XY plane angle to pierce point (polar coordinate – refer to SUL<sub>rp</sub>).
- SUL<sub>xz</sub>** Angle of the force vector projected onto the XZ plane
- SUL<sub>yz</sub>** Angle of the force vector projected onto the YZ plane.

## SPECIFICATIONS

	<b>DUAL BALLSCREW</b>	<b>QUAD BALLSCREW</b>
Dimensions	1000 x 740 x 2010mm (40 x 29.1 x 79in)	1000 x 740 x 2010mm (40 x 29.1 x 79in)
	Weight 1200 kg (2640lbs)	Weight 1200 kg (2640lbs)
Power	360-480V AC 3phase 16A (Maximum per phase)	



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