



**Advanex Americas, Inc.**

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Fax:  
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Input Data			
<b>Spring Details</b>			
Spring Type	Round Wire Compression		
Design Standard	EN 13906-1: 2002		
Tolerance Standard	EN 15800:2008		
<b>Material Information</b>			
Material - ASTM A228 (Music Wire)			
Young's Modulus	206000	MPa	
Rigidity Modulus	81500	MPa	
Density	0.00000785	kg/mm <sup>3</sup>	
Unprestressed Range	0-45	%	
Prestressed Range	45-56	%	
<b>Design Information</b>			
End Type	Closed & Ground		
Dead Coils	2.00		
Tip Thickness	50.00	%	
End Fixation			
Wire Diameter	1.50	mm	
Outside Diameter	20.00	mm	
Total Coils	6.00		
Spring Rate	2.04	N/mm	
Free Length	20.00	mm	

Calculated Data		
Solid Length	9.00	mm
Solid Length (Max)	9.12	mm
Solid Load	22.40	N
Solid Stress	312.67	MPa
OD Expansion at solid	0.0676	mm
Stress Factor	1.11	
Active Coils	4.00	
Spring Index	12.33	
Helix Angle	4.18	Deg
Buckling Possible	20.00	mm
Buckling Definite	20.00	mm
Spring Pitch	4.25	mm
Inside Diameter	17.00	mm
Mean Coil Dia.	18.50	mm
Outside Diameter	20.00	mm
Wire Length	349.38	mm
Weight	0.00485	kg
Natural Frequency	23839	RPM

Operating Data			
	Operating Positions		
	1	2	
Length (mm)	17.50	15.00	
Load (N)	5.09	10.18	
Deflection (mm)	2.50	5.00	
Stress (MPa)	71	142	
Stress % Solid	23	45	
O.D. Expansion (mm)	0.0154	0.0307	



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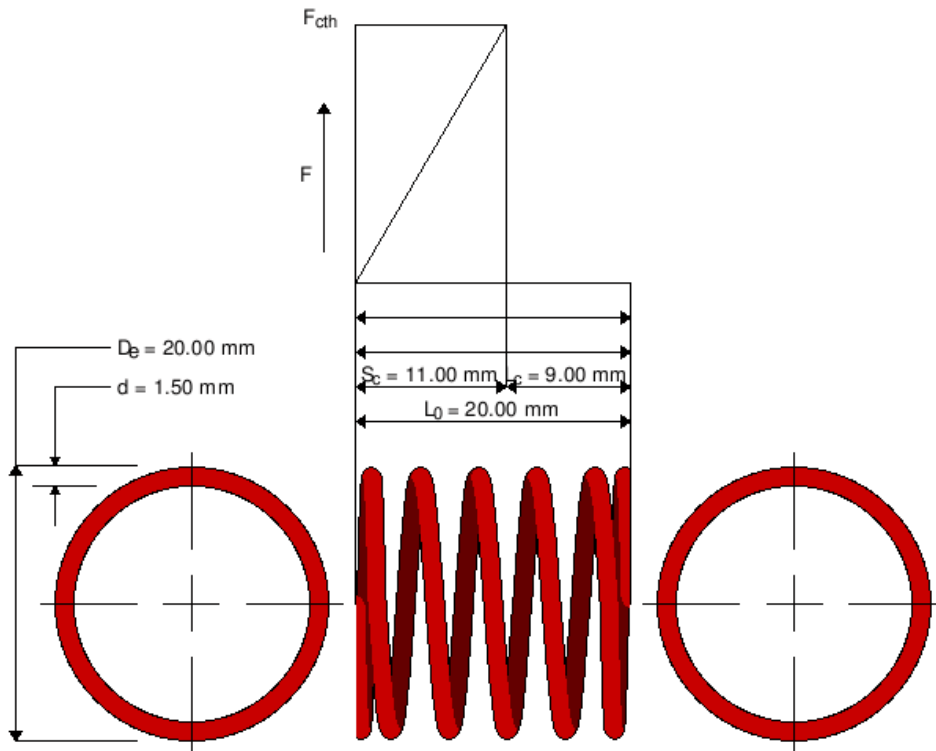
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Spring Tolerances					
	EN 15800:2008				
	Value		Grade 1	Grade 2	Grade 3
Free Length	20.00	±	1.07	1.70	2.71
Outside Diameter	20.00	±	0.250	0.450	0.900
Spring Rate	2.04	±			
Squareness			0.630	1.00	1.60
Parallelism			0.300	0.600	1.20
Working Load 1	5.09	±	2.22	3.53	5.65
Working Load 2	10.18	±	2.27	3.61	5.77

## Spring Drawing





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Load / Length Drawing

