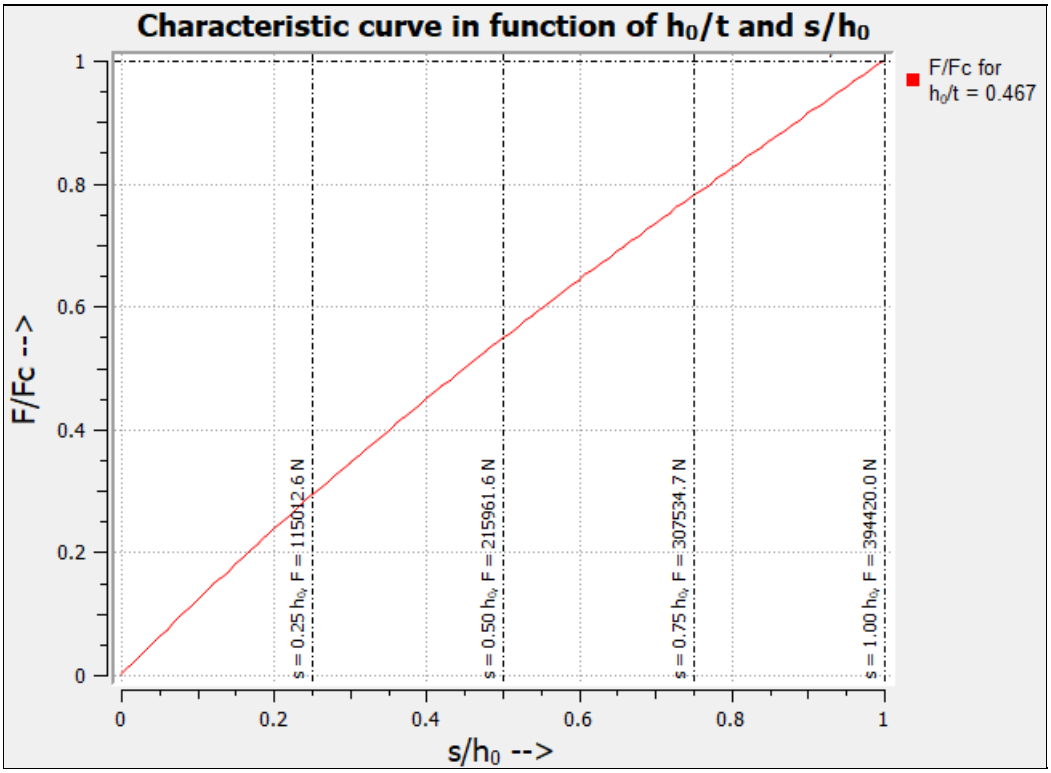
Reliable Pressing Disc Spring Report

Spring properties

Spring name:	254x127x13.63			
Outside diameter:	250.00	mm,	9.843	in
Inside diameter:	127.00	mm,	5.000	in
Annulus width:	3.75	mm,	0.148	in
Height:	20.00	mm,	0.787	in
Original thickness:	14.50	mm,	0.571	in
Reduced thickness:	13.63	mm,	0.537	in
Free height:	6.37	mm,	0.251	in
Base angle:	7.04° ,		0.12	rad
Temperature:	45.00	°C,	113.00	°F
Material:	Spring Steel @ Rockwell C 50			
Young's modulus:	206000.00	N/mm²,	3e+07	lbs/in²
Poisson's ratio:	0.30			
Reduced thickness/thickness ratio:	0.94			
Weight:	3.8118	Kg,	8.4011	lbs
Friction:	Not considered			
Algorithm:	Standard			

Single spring characteristic curve and values



25% of the free height:	1.59	mm,	0.063	in
Load:	115012.63	N,	25873.55	lbs
σ :	509.4	N/mm²,	7.4e+04	lbs/in²
50% of the free height:	3.19	mm,	0.125	in
Load:	215961.58	N,	48583.29	lbs
σ :	971.0	N/mm²,	1.4e+05	lbs/in²
75% of the free height:	4.78	mm,	0.188	in
Load:	307534.75	N,	69183.84	lbs
σ :	1454.9	N/mm²,	2.1e+05	lbs/in²
100% of the free height:	6.37	mm,	0.251	in
Load	394420.02	N,	88729.78	lbs
σ :	2090.3	N/mm²,	3e+05	lbs/in²

It is recommended to use a max deflection of 75 to 80% of the full spring deflection.

Spring stack characteristic values

25% of the free height:	25.48	mm,	1.003	in
Load:	230025.26	N,	51747.10	lbs
50% of the free height:	50.96	mm,	2.006	in
Load:	431923.16	N,	97166.59	lbs
75% of the free height:	76.44	mm,	3.009	in
Load:	615069.50	N,	138367.67	lbs
100% of the free height:	101.92	mm,	4.013	in
Load:	788840.05	N,	177459.56	lbs

It is recommended to use a max deflection of 75 to 80% of the full spring deflection.

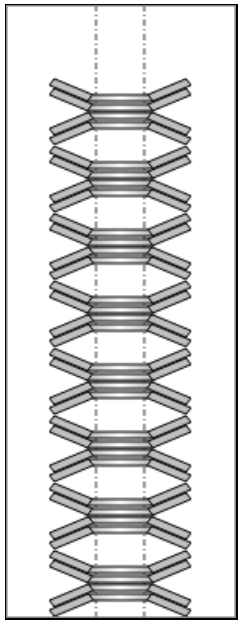
Loads and deflections

Single spring

Load:	0.00	N,	0.00	lbs
Deflection:	0.000	mm,	0.000	in

Spring stack

Load:	0.00	N,	0.00	lbs
Stack deflection:	0.000	mm,	0.000	in



Spring properties under the applied load

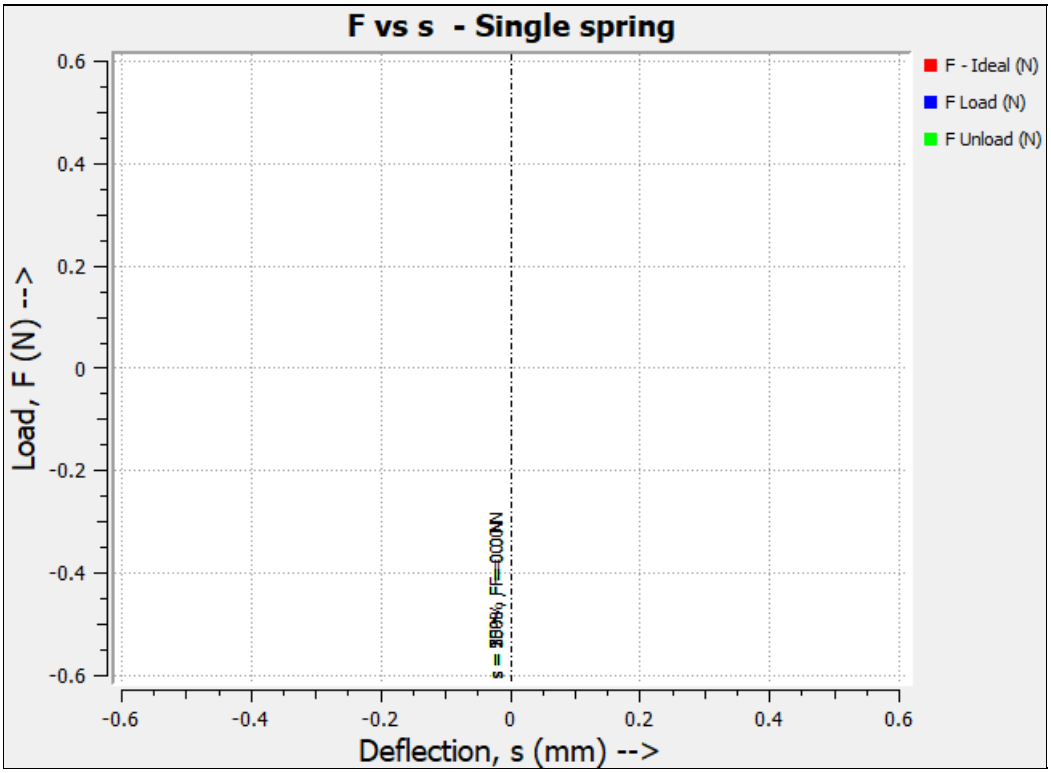
Single spring

Outside diameter:	250.00	mm,	9.843	in
Inside diameter:	127.00	mm,	5.000	in
Height:	20.00	mm,	0.787	in
Free height:	6.37	mm,	0.251	in
Base angle:	7.04°			

Spring stack

Height:	539.73	mm	21.249	in
Free height:	101.92	mm	4.013	in

Single spring load curve



Spring rate and work

Single spring

Spring rate:	0.00	N/mm
Spring work:	0.00	N·mm

Spring stack

Spring rate:	0.00	N/mm
Spring work:	0.00	N·mm