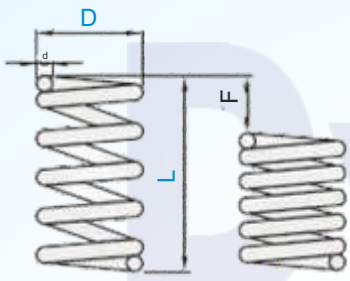
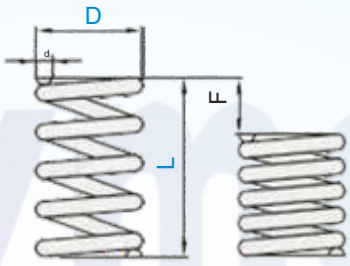
Round Wire Coil Springs : DC- UL

Defection O.D. Referenced, Stainless Steel, Light Load





Closed End (∗ Dimensions Both Ends Not Ground)

Outer dia. D φ10 or less $^{0}_{-0.5}$mm

φ Above12 $^{0}_{-0.85}$mm

Closed End (Both Ends Ground)

Free length L 50 or less ± 1mm

above 60

Material of Round Wire Springs

Material SUS304-WPB Spring Constant ±10%

- DC-UL: Fmax. (allowable displacement) = L×40%
- The outer diameter standard type gives priority to guaranteeing the outer diameter, while the inner diameter is for reference only.

Type	Coil O.D. D - Free Length L		Wire Diameter D_1	Reference Length	F Max.	N{kgf} max.		Fa%
DC-UL	2 -	5*	0.2	1.65	2	0.98	{0.1}	40
		10*	0.26	5.07	4	1.96	{0.2}	
		15*			6	2.94	{0.3}	
	3 -	5*	0.3	2	2	2	{0.2}	
		10*	0.35	3.7	4	3.9	{0.4}	
		15*	0.4	6.6	6	5.9	{0.6}	
		20*			8	7.8	{0.8}	
		25*	0.45	11.7	10	9.8	{1}	
		30*			12	11.8	{1.2}	
	4 -	5*	0.35	2.1	2	2	{0.2}	
		10*	0.45	5.3	4	3.9	{0.4}	
		15*			6	5.9	{0.6}	
		20*	0.5	8	8	7.8	{0.8}	
		25*			10	9.8	{1}	
		30*	0.55	12.7	12	11.8	{1.2}	
		40	0.6	19.8	16	15.7	{1.6}	
	5 -	5*	0.4	2.2	2	2	{0.2}	
		10*	0.5	4.75	4	3.9	{0.4}	
		15*			6	5.9	{0.6}	
		20*	0.55	6.88	8	7.8	{0.8}	
		25*			10	9.8	{1}	
		30	0.7	12.6	12	11.8	{1.2}	
		35			14	13.7	{1.4}	
	8 -	10	0.65	4.6	4	3.9	{0.4}	
		15	0.75	8.3	6	5.9	{0.6}	
		20			8	7.8	{0.8}	
		25			10	9.8	{1}	
		30	0.8	10.4	12	11.8	{1.2}	
		35			14	13.7	{1.4}	
		40			16	15.7	{1.6}	
		45	0.85	14.5	18	17.7	{1.8}	
	10 -	10	0.75	4.7	4	3.9	{0.4}	
		15	0.8	6.2	6	5.9	{0.6}	
		20			8	7.8	{0.8}	
		25	0.9	9.5	10	9.8	{1}	
		30			12	11.8	{1.2}	
		35			14	13.7	{1.4}	
		50	1	15.5	20	19.6	{2.0}	
		60	1.1	23.7	24	23.5	{2.4}	
	12 -	15	0.9	6.75	6	5.9	{0.6}	
		20	1	10	8	7.8	{0..8}	
		25	1	10	10	9.8	{1.0}	
		40	1.2	21.6	16	15.7	{1.6}	
	13 -	20	1	8.25	8	7.8	{0.8}	
		30	1.1	12.1	12	11.8	{1.2}	
		40	1.1	12.1	16	15.7	{1.6}	
	16 -	15	1.1	7.7	6	5.9	{0.6}	
		25	1.2	10.8	10	9.8	{1.0}	
	20 -	30	1.7	12.8	12	35.3	{3.6}	

■Spring constant

◐ D12 is for DC-UY·DC-UR·DC-UF·DC-UBB only. D14 is for DC-UBB only.

D \ Type	DC-UV	DC-UY	DC-UR	DC-UF	DC-UL	DC-UTT	DC-UM	DC-UH	DC-UBB
2	N/mm 0.05 (kgf/mm) (0.005)	0.05(0.005)	0.2(0.02)	0.3(0.03)	0.5(0.05)	1.5{0.15}	2.0(0.2)	2.9(0.3)	4.9(0.5)
3									
4		N/mm 0.098 (kgf/mm) (0.01)	N/mm 0.29 (kgf/mm) (0.03)	N/mm 0.49 (kgf/mm) (0.05)	N/mm 0.98 (kgf/mm) (0.1)	N/mm 2.0 (kgf/mm) (0.2)	N/mm 2.9 (kgf/mm) (0.3)	N/mm 5.9 (kgf/mm) (0.6)	N/mm 9.8 (kgf/mm) (1.0)
5									
6									
8									
10								N/mm 9.8 (kgf/mm) (1.0)	N/mm 19.6 (kgf/mm) (2.0)
12		N/mm 0.2 (kgf/mm) (0.02)							
13									
14									
16									
18									
20		0.3(0.03)	0.5(0.05)	0.98(0.1)	2.9(0.3)	3.9(0.4)	4.9(0.5)	14.7(1.5)	29.4(3.0)
Fmax.	F=L×70%	F=L×75%	F=L×60%	F=L×45%	F=L×40%	F=40%	F=35%	F=30%	F=25%

kgf(Load)=N/mm(Spring Constant)×0.101972×F(Allowable Displacement),(kgf)=N×0.101972

- The outer diameter standard type gives priority to guaranteeing the outer diameter, while the inner diameter is for reference only.
- Both ends of DC-UL models with * are not ground.
- Be sure to use within the allowable displacement Fmax.(mm)
- Calculation method of laps (reference value):
  Total number of laps = solid length ÷ wire diameter (d)-1
  Effective laps=total number of laps-2
- The number of laps is a reference value. There will be some deviations among batches. The solid length is a reference value. There will be slight differences among batches. Moreover, if it is used under the limit condition of the solid length, it may cause the spring to be deformed or be damaged after using only a limited number of times.
- The solid length is a reference value. There will be slight differences among batches.

ORDERING GUIDE

Part Number

DC-UL20 - 30

www.dymextech.com
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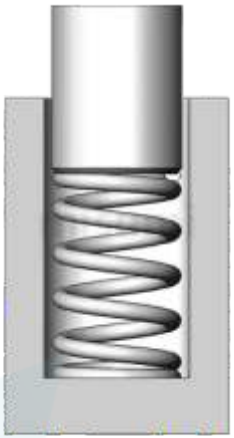
PRODUCT FEATURES

- Different from ordinary springs on the market, Dymex Round Wire Springs are more precise and refined, divided into the inner diameter standard type and the outer diameter standard type, the former of which is manufactured giving priority to the inner diameter tolerance while the latter is manufactured giving priority to the outer diameter tolerance.

- Select an appropriate Round Wire Springs type according to the actual installation situation, and refer to the published content for the specific inner and outer diameter tolerance values.
  * The solid length is a reference value. If it is used under the limit condition of the solid length, the spring may be deformed, or damaged after using only a limited number of times. Therefore, use within the allowable displacement Fmax.(mm).
  To increase the usage count, it is recommended to use the spring up to 70% of the allowable displacement Fmax..

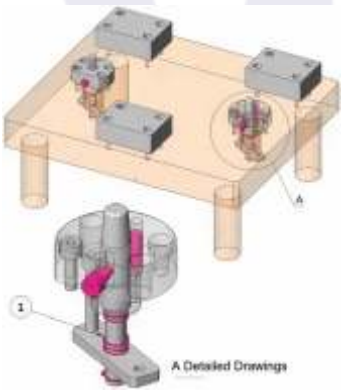


Installation Diagram of Outer Diameter Standard Type Round Wire Coil Spring, Round Wire Springs

PRECAUTIONS

Precautions for use of Round Wire Springs
Operating temperature of Round Wire Springs
SWP-A.....Normal temperature (0~40℃)
Stainless steel.....-10~100℃
Spring oil tempered steel wire.....Normal temperature (0~40℃)

- * If the spring is used under conditions exceeding the above temperature, the load value may decrease due to usage conditions.
- * When used in an environment with high and low temperature differences and humidity such as outdoors, it is recommended to choose stainless steel products.
- * Heat-resistant springs can also be used. For details, refer to the Plastic Mold Components Catalog.
  Stainless steel springs are also magnetic. Please be careful.



EXAMPLE OF USE

Hole Reference Positioning Mechanism A Round Wire Springs is mechanism for positioning the workpiece based on the hole reference.
Loosening during positioning can be reduced by using a tapered pin to eliminate the deviation caused by the tolerance of each workpiece hole. Select the compression spring to move from the beginning of the positioning contact with the workpiece.