

MOELLER

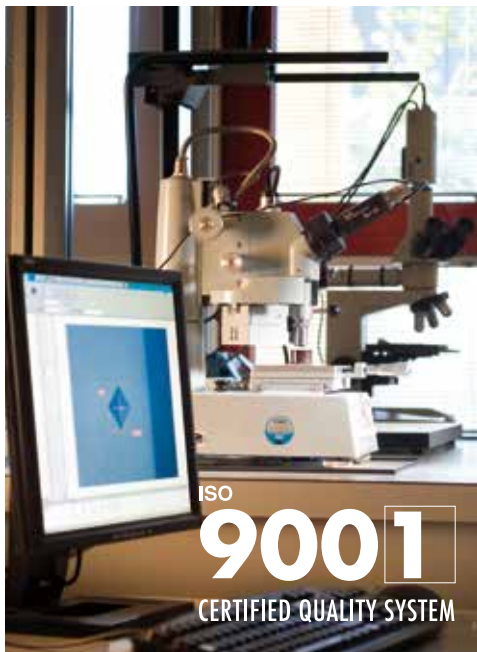
PRECISION TOOL

YOUR GLOBAL PARTNER FOR STANDARD & SPECIAL DIE COMPONENTS

MECHANICAL DIE SPRINGS



The World's Leading Mechanical
Die Spring Manufacturer



EN Ongoing research and development, along with strict quality assurance procedures in compliance with ISO 9001, ensure very high levels of dimensional accuracy, durability and reliability.

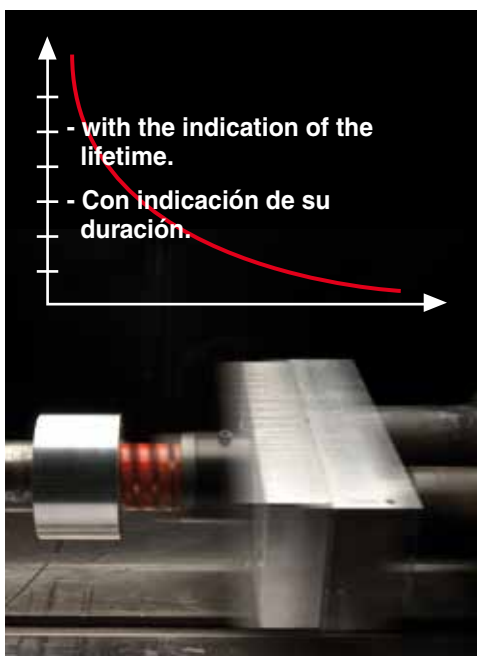
ES La continuada actividad de investigación y desarrollo unida a los severos controles de proceso, según el estándar ISO 9001, garantizan un producto con características dimensionales, de duración y fiabilidad superiores.

EN CAD SPRINGS, the first and revolutionary integrated software to calculate, select and generate Special Springs' products, available also on CADenas Partserver library.

ES CAD SPRINGS, el primer y revolucionario software integrado de cálculo, selección y creación paramétrica de los muelles para moldes Special Springs, disponible también sobre partserver de CADenas.



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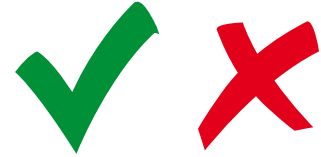
EN Ongoing in-house reliability tests allow Special Springs to provide estimated service life values of springs in compliance of working deflections and recommendations. The stated service life values are not guaranteed due to the impossibility to consider all variables on the real working conditions of the springs.

ES Continuados tests internos de fiabilidad han permitido indicar valores de duración en función de las deflexiones y de las recomendaciones de uso. Estos valores no son garantizados debido al elevado número de variables en las reales condiciones de trabajo.

Series Serie	Standard Standard	Color Color	Cross section wire Sección del perfil	Load Carga				
					+ 3,000,000 cycles	~ 1,500,000 cycles	300 - 500,000 cycles	100 - 200,000 cycles
RSL	Special Springs Std 	Light green Verde claro (RAL6019)		Super-light Super-ligero	30 % L ₀	40% L ₀	45% L ₀	50% L ₀
RLL	ISO 10243 	Green Verde (RAL 6002)		Light Ligero	25% L ₀	30% L ₀	35% L ₀	40% L ₀
RML	ISO 10243 	Blue Azul marino (RAL 5003)		Medium Medio	25% L ₀	30% L ₀	33.75% L ₀	37.5% L ₀
RHL	ISO 10243 	Red Rojo (RAL 3000)		Heavy Fuerte	20% L ₀	25% L ₀	27.5% L ₀	30% L ₀
REL	ISO 10243 	Yellow Amarillo (RAL 1004)		Extra-Heavy Extra-Fuerte	17% L ₀	20% L ₀	22.5% L ₀	25% L ₀
RUL	Special Springs Std 	Silver Plateado (RAL 9006)		Ultra-Heavy Ultra-Fuerte	10% L ₀	12% L ₀	13.5% L ₀	15% L ₀
RWL	Special Springs Std 	White Blanco (RAL 9016)		Hyper-strong Hyper-fuerte	5% L ₀	6.5% L ₀	7.5% L ₀	8.3 - 14% L ₀
CG	Special Springs Std 	Green Verde (RAL 6002)		Light Ligero	25% L ₀	30% L ₀	35% L ₀	40% L ₀
CB	Special Springs Std 	Blue Azul (RAL 5003)		Medium Medio	25% L ₀	30% L ₀	33.75% L ₀	37.5% L ₀
CR	Special Springs Std 	Red Rojo (RAL 3000)		Heavy Fuerte	20% L ₀	25% L ₀	27.5% L ₀	30% L ₀
L	Special Springs Std 	Not painted Muelles no pintados		-	16% L ₀	24% L ₀	28% L ₀	32% L ₀
OLS	US Standard 	Silver-Blue Plateado-Azul (RAL 5003)		Light Ligero	25% L ₀	40% L ₀	45% L ₀	50% L ₀
OMS	US Standard 	Silver-Red Prata-Rojo (RAL 3000)		Medium Médio	20% L ₀	25% L ₀	31% L ₀	37% L ₀
OHS	US Standard 	Silver-Gold Prata-Oro (RAL XXXX)		Heavy Fuerte	15% L ₀	20% L ₀	25% L ₀	30% L ₀
OES	US Standard 	Silver-Green Prata-Verde (RAL 6002)		Extra-Heavy Extra-Fuerte	15% L ₀	20% L ₀	22.5% L ₀	25% L ₀

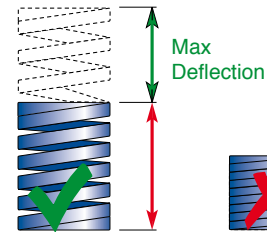
EN Correct use of Special Springs' products assures higher performance levels with respect to the lifetime values indicated. Incorrect uses can significantly reduce the expected lifetime and may cause damages or injury.

ES El uso correcto de los muelles Special Springs asegura prestaciones muy superiores a las indicaciones de duración indicadas. Utilizaciones incorrectas reducen significativamente los valores de duración y pueden provocar situaciones de peligro y daños.



EN Do not exceed the maximum deflection due to a high risk of sudden failure and resulting damage to the tool.

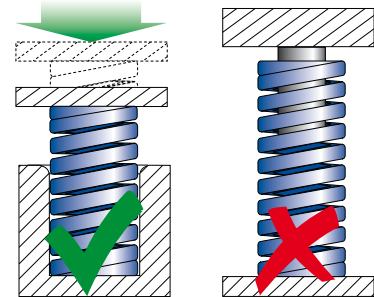
ES No utilizar los muelles sobrepasando la deflexión máxima indicada. Peligro de roturas imprevistas y daños al troquel.



EN The greater the pre-load the longer the lifetime for the same total deflection. Thus, longer springs with same total force, will assure longer lifetime. It is recommended to always apply a minimum pre-load of 5% of the free length. Absent or insufficient pre-load causes unexpected failure to the springs.

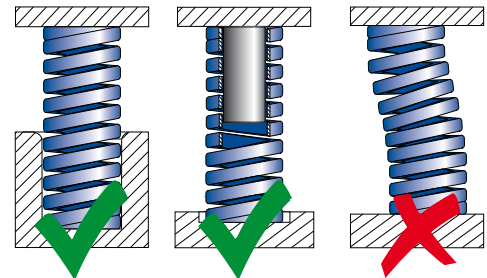
ES A paridad de deflexión total, cuanto mayor es la precarga, mayor será la duración de los muelles. Por eso, los muelles de mayor longitud a paridad de fuerza total garantizan una mayor duración. Aconsejamos una precarga mínima del 5% de la longitud libre. Falta o la insuficiencia de precarga, puede llevar a des aflojamientos repentinos de los muelles.

Pre-load $\geq 5\% L_0$



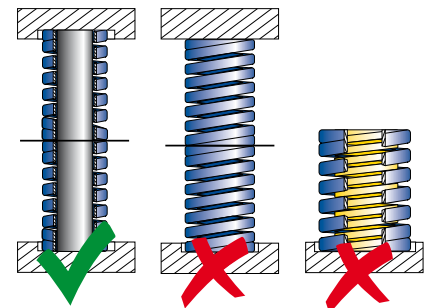
EN Proper guiding is essential to long life. It is recommended to always guide springs with a free length /diameter ratio exceeding 3.5.

ES Cuanto mayor sea el conjunto de dispositivos de guía, mayor será la duración de los muelles. Es siempre necesario guiar todos los muelles con una relación de longitud/diámetro mayor de 3,5.



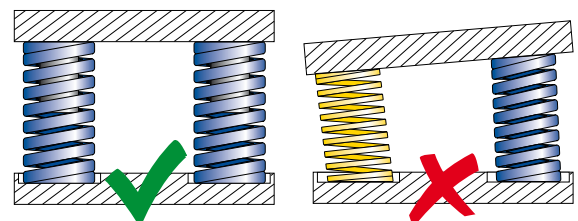
EN Avoid the use of insufficiently guided, stacked springs or nested springs due to high risk of serious damage and injury.

ES Evitar el uso de muelles superpuestos que no estén completamente guiados o insertados los unos en los otros. Peligro de daños a personas o cosas.



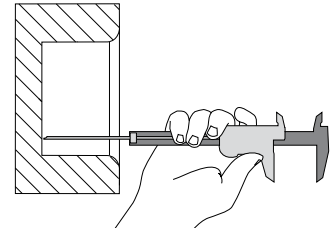
EN When using different types of springs simultaneously, ensure that deflections and forces guarantee a balanced load. Always ensure the best perpendicularity between surfaces to avoid early failure of the springs.

ES Si utilizan muelles diferentes simultáneamente, comprueben que las deflexiones y las fuerzas estén equilibradas. Siempre garanticen la máxima perpendicularidad entre los planos de contacto para evitar prematuros aflojamientos de los muelles.



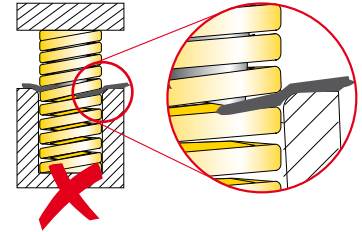
EN Tool maintenance (grinding, die sharpening) can vary the original working deflection of the springs because of the subsequent decrease in shut height. Always check and re-set the original working stroke. Failure to respect this requirement may result in high risk of early failures or damages to the tool.

ES Las mantenuciones del molde pueden modificar la deflexión de trabajo original de los muelles. Controlar y restablecer siempre las deflexiones iniciales. Peligro de prematuros aflojamientos de los muelles o daños al molde.



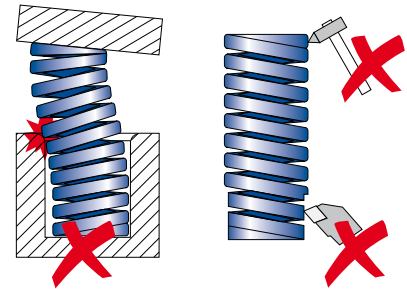
EN The presence of scraps or any solids between coils causes a reduction of deflection, overload and early failure of the springs and damage to the tool may result. Provide shields/guards to protect springs from scraps as necessary.

ES La presencia de cuerpos extraños entre las espiras de los muelles provoca reducciones de carrera, sobrecargas y rupturas de los muelles con daños al molde. Siempre buscar y eliminar estos organismos.



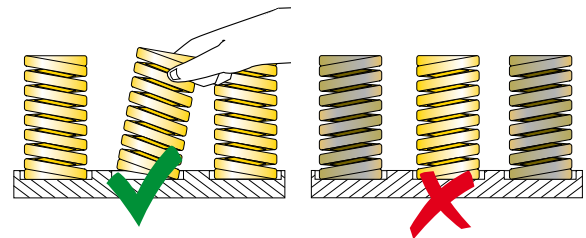
EN Any alteration on the surface of the springs (cutting, grinding, scratching, etc.) may significantly reduce the lifetime. Always replace damaged springs with new ones.

ES Cualquier daño sobre la superficie de los muelles (cortes, abrasiones, amoladuras) puede reducir significativamente la duración. Sustituir siempre los muelles dañados.



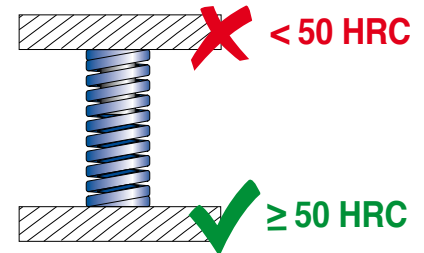
EN If one spring collapses, an imbalanced load will occur with possible subsequent damage to the other springs. Replace all springs as a set. Advance planned maintenance prevents damages and saves money.

ES Un muelle colapsado crea un desequilibrio de las cargas con daños a los demás muelles o al molde. Siempre sustituir todos los muelles. Una sustitución programada de los muelles previene daños y reduce costes.



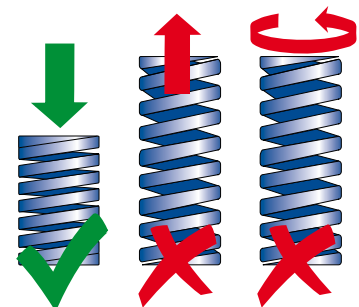
EN The springs are made with hardened, premium alloy steel. To prevent wear and abrasion of surfaces in contact with the springs, please use adequate material and hardness for optimal use.

ES Los muelles son fabricados con acero templado. Para prevenir el desgaste y la abrasión de la superficies en contacto con los muelles se recomienda usar materiales y durezas adecuados para un uso óptimo.



EN Do not apply forces other than in the compression direction. Using compression springs as extension or torsion springs will cause deformation and sudden failure. The improper use of springs may bring unforeseen accidents with damage and injury.

ES No aplicar fuerzas que no sean de compresión. Utilizar los muelles en tracción o torsión es causa de deformación y rotura. El uso inadecuado de los muelles puede comportar incidentes imprevisibles con daños a cosas y personas.



Method of calculation - Método de cálculo

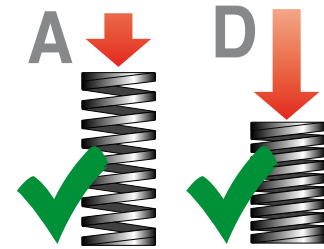
EN Spring constant is the load required in N or *lbs* to deflect a spring by 1 mm or *0.1 inch*.

ES La constante de los muelles es la carga requerida en N o *lbs* para comprimir un muelle 1 mm ó *0,1 pulgadas*.

R ± 10%
Spring Constant

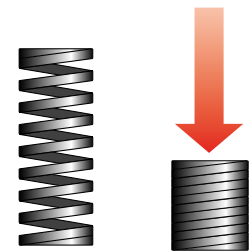
EN Special Springs verifies the consistency of springs constant values by measurements of load in the range of deflections stated and between columns A and D.

ES Special Springs verifica la coherencia de los valores de los muelles mediante mediciones de la carga en el rango de las deflexiones indicadas en las columnas A y D



EN If the measurements of the spring constant is made with deflections below the values stated in column A, or with deflections over the values stated in column D, the results obtained can be out of the tolerance of +/- 10% on the nominal value.

ES Si las mediciones se hacen con mínimos por debajo de los valores indicados en la columna A, o máximos por encima de los indicados en la columna D, los resultados obtenidos pueden estar fuera de la tolerancia de +/- 10% del valor nominal.



Example of calculation of the spring constant RHL100-100 - Ejemplo de cálculo de la constante RHL100-100

1 - deflect the spring to a value x_1 5 mm - *0.2 inch*, (as indicated in column A) and measure the force F_1 (N - *lbs*)

1 - comprimir el muelle 5 mm - *0.2 pulgadas*, valor x_1 como se indica en la columna A y medir la fuerza F_1 (N - *pulgadas*)

2 - deflect the springs to a value x_2 7,5 mm - *0.3 inch* (as indicated in column A) and measure the force F_2 (N - *lbs*)

2 - comprimir el muelle 7,5 mm - *0.3 pulgadas*, valor x_2 como se indica en la columna D y medir la fuerza F_2 (N - *pulgadas*)

3 - calculate the springs constant R by following formula $R = (F_2 - F_1) / (x_2 - x_1)$

3 - calcular la constante R con la siguiente fórmula $R = (F_2 - F_1) / (x_2 - x_1)$

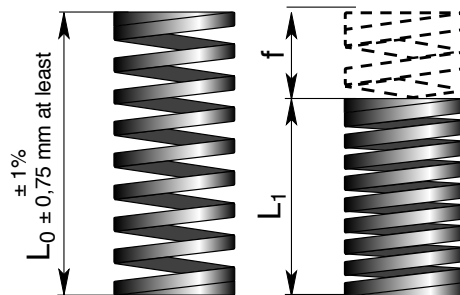
4 - in this case R will match the value of 375 N/mm ± 10% - *214.3 lbs/0.1 inch ± 10%* as indicated in column R

4 - en este caso R coincidirá con el valor de 375 N/mm ± 10% - *214.3 lbs/0.1 pulgadas ± 10%* como se indica en la columna R

Method of calculation - Método de cálculo

EN The force of one spring at given deflection is the result of spring constant R (N/mm - lbs/0.1 inch) multiplied by the deflection f (mm - inch). This value is always influenced by the tolerances of the springs constant R (N/mm - lbs/0.1 inch) that is ± 10%, and the tolerance of free length of the springs L₀ (mm - inch) ± 1% with min. 0,75 mm - 0.03 inch.

ES La fuerza de un muelle con una compresión determinada es el resultado de la constante R (N/mm - lbs/0.1 pulgadas) multiplicado por la deflexión f (mm - pulgadas). Este valor está influido por las tolerancias de la constante R (N/mm - lbs/0.1 pulgadas) ± 10% y la longitud libre L₀ (mm - pulgadas) ± 1% con un mínimo de 0,75 mm - 0.03 pulgadas.



EN For a better understanding, the example below shows the calculation of the nominal value of force and the min and max values possible for the spring RHL 125-300 at a given length L₁ of 55,1 mm - 2.17 inch as follows:

ES Para una mejor comprensión, calculamos el valor nominal de fuerza y los valores mínimo y máximo admitidos para el muelle RHL 125-30 con L₁ de 55,1 mm - 2.17 pulgadas como sigue:

$R = 172 \text{ N/mm} \pm 10\% - 98.3 \text{ lbs/0.1 inch} \pm 10\%$	$L_0 = 76 \text{ mm} \pm 1\% - 2.99 \text{ inch} \pm 1\%$
$R_{\min} = 154,8 \text{ N/mm} \pm 10\% - 88.4 \text{ lbs/0.1 inch} \pm 10\%$	$L_{\min} = 75,24 \text{ mm} - 2.96 \text{ inch} \pm 1\%$
$R_{\max} = 189,2 \text{ N/mm} \pm 10\% - 108.0 \text{ lbs/0.1 inch} \pm 10\%$	$L_{\max} = 76,76 \text{ mm} - 3.02 \text{ inch} \pm 1\%$

EN Nominal value of force (F_{nom}) will be:

ES Así el valor nominal de fuerza (F_{nom}) sería:

$$F_{\text{nom}} = R \cdot (L_0 - L_1)$$

$$F_{\text{nom}} = 172 \cdot (76 - 55,1)$$

$$F_{\text{nom}} = 3595 \text{ N}$$

$$F_{\text{nom}} = 98.3 \cdot (2.99 - 2.17)$$

$$F_{\text{nom}} = 80.6 \text{ lbs/0.1}$$

EN Min value of force (F_{min}) will be:

ES El valor mínimo de fuerza (F_{min}) sería:

$$F_{\text{min}} = R_{\text{min}} \cdot (L_0 - L_1) - (L_0 - L_{\text{min}}) \cdot R_{\text{min}}$$

$$F_{\text{min}} = 154,8 \cdot 20,9 - 0,76 \cdot 154,8$$

$$F_{\text{min}} = 3117,67 \text{ (N)}$$

$$F_{\text{min}} = 88.4 \cdot 0.82 - 0.03 \cdot 88.4$$

$$F_{\text{min}} = 69.8 \text{ lbs/0.1}$$

EN Max value of force (F_{max}) will be:

ES El valor máximo de fuerza (F_{max}) sería:

$$F_{\text{max}} = R_{\text{max}} \cdot (L_0 - L_1) + (L_{\text{max}} - L_0) \cdot R_{\text{max}}$$

$$F_{\text{max}} = 189,2 \cdot 20,9 + 0,76 \cdot 189,2$$

$$F_{\text{max}} = 4098,07 \text{ (N)}$$

$$F_{\text{max}} = 108.0 \cdot 0.82 + 0.03 \cdot 108.0$$

$$F_{\text{max}} = 91.8 \text{ lbs/0.1}$$

Springs Selection

- EN** The following selection guideline is essential for an easy and fast selection of the springs. Please specify the following working parameters: expected lifetime (ex.: 3,000,000 cycles), hole diameter (ex.: 16 mm), total force (ex.: 380 N) and total working deflection including pre-load (ex.: 5 mm).
- ES** El criterio siguiente permite una fácil y rápida selección de los muelles: es suficiente definir los siguientes parámetros de proyecto: duración (ej. 3,000,000 ciclos), diámetro de alojamiento (ej. 16 mm), fuerza total (ej. 380 N) y deflexión total de uso con pre-carga (ej. 5 mm).

EN Through the tabs on pages 7 and 8 cross the expected lifetime section (ex.: 3,000,000 cycles) with the hole diameter required (ex.: 16 mm).

ES Las tablas de las páginas 7 y 8 permiten identificar el valor de duración (3,000,000) y diámetro de alojamiento (16 mm) requeridos.

RECTANGULAR WIRE SECTION

Estimated Life	Hole diameter (mm)								Series	
	10	12,5	16	20	25	32	40	50		63
+ 3,000,000 cycles	-	-	-	220	410	485	745	1560	-	RSL
	70	130	185	315	560	830	1130	2320	3250	RLL
	110	190	330	525	845	1520	2030	3050	5310	RML
	125	200	380	935	1560	2530	3270	4860	8440	RHL
	145	230	455	1090	1760	2800	4770	6820	11890	REL
-	-	-	-	4090	6350	7700	12280	-	-	RUL

EN The intersection of the expected lifetime with the hole diameter shows different forces. Select the one closest to your need.

ES De la intersección del número de ciclos y diámetro se obtienen una serie de fuerzas. Elegir la fuerza más cercana a aquella requerida redondeando por exceso si fuese preciso.

RECTANGULAR WIRE SECTION

Estimated Life	Hole diameter (mm)								Series	
	10	12,5	16	20	25	32	40	50		63
+ 3,000,000 cycles	-	-	-	220	410	485	745	1560	-	RSL
	70	130	185	315	560	830	1130	2320	3250	RLL
	110	190	330	525	845	1520	2030	3050	5310	RML
	125	200	380	935	1560	2530	3270	4860	8440	RHL
	145	230	455	1090	1760	2800	4770	6820	11890	REL
-	-	-	-	4090	6350	7700	12280	-	-	RUL

EN After selecting the proper force box (ex.: 380 N) look to the corresponding load range of springs (ex.: RHL - heavy load).

ES Una vez elegida la fuerza requerida (380 N) se identifica la correspondiente serie de muelles (R - carga fuerte).

RECTANGULAR WIRE SECTION

Estimated Life	Hole diameter (mm)								Series	
	10	12,5	16	20	25	32	40	50		63
+ 3,000,000 cycles	-	-	-	220	410	485	745	1560	-	RSL
	70	130	185	315	560	830	1130	2320	3250	RLL
	110	190	330	525	845	1520	2030	3050	5310	RML
	125	200	380	935	1560	2530	3270	4860	8440	RHL
	145	230	455	1090	1760	2800	4770	6820	11890	REL
-	-	-	-	4090	6350	7700	12280	-	-	RUL

EN Then go to the standard tabs on the column A corresponding to the expected lifetime of 3,000,000 cycles and select the required total spring deflection.

ES En las páginas de los muelles serie R, y en correspondencia de la columna A (3,000,000 ciclos), se identifica la deflexión requerida.

Code	D _i	D _o	L _o	R	A	B	C	D	E				
	mm	mm	mm	mm	20% L _o	25% L _o	27.5% L _o	30% L _o	approx. do not use				
RHL 62 - 100	16	25	75.7	5.0	379	6.3	477	6.9	520	7.5	568	8.4	636
RHL 62 - 125	16	32	52.8	6.4	338	8.0	422	8.8	465	9.6	507	10.5	554
RHL 62 - 150	16	38	48.5	7.6	369	9.5	461	10.5	507	11.4	553	13.6	660
RHL 62 - 175	16	44	42.8	8.8	377	11.0	471	12.1	518	13.2	565	15.9	681
RHL 62 - 200	16	51	37.1	10.2	378	12.8	475	14.0	520	15.3	568	18.9	701
RHL 62 - 250	16	64	30.3	12.8	388	16.0	485	17.6	533	19.2	582	24.9	754
RHL 62 - 300	16	76	25.7	15.2	391	19.0	488	20.9	537	22.8	586	29.2	750
RHL 62 - 350	16	89	21.7	17.8	386	22.3	484	24.5	531	26.7	579	34.5	749
RHL 62 - 400	16	102	19.3	20.4	394	25.5	492	28.1	541	30.6	591	39.1	755
RHL 62 - 450	16	115	15.7	23.0	361	28.8	452	31.6	497	34.5	542	44.0	691
RHL 62 - 1200	3.1 x 2.5	305	7.1	61.0	433	76.3	542	83.9	596	91.5	650	103.6	736

EN Once selected the total springs deflection (ex.: 5 mm) select the corresponding spring code (ex.: RHL 62-100). The bigger the pre-load the longer the lifetime of springs for the same total deflection (% of L_o).

ES Una vez elegida la deflexión de proyecto (5 mm) se identifica el código del muelle correspondiente (R16 - 025). A paridad de deflexión total (% de L_o), cuanto mayor sea la precarga, mayor será la duración de los muelles.

Code	D _i	D _o	L _o	R	A	B	C	D	E				
	mm	mm	mm	mm	20% L _o	25% L _o	27.5% L _o	30% L _o	approx. do not use				
RHL 62 - 100	16	25	75.7	5.0	379	6.3	477	6.9	520	7.5	568	8.4	636
RHL 62 - 125	16	32	52.8	6.4	338	8.0	422	8.8	465	9.6	507	10.5	554
RHL 62 - 150	16	38	48.5	7.6	369	9.5	461	10.5	507	11.4	553	13.6	660
RHL 62 - 175	16	44	42.8	8.8	377	11.0	471	12.1	518	13.2	565	15.9	681
RHL 62 - 200	16	51	37.1	10.2	378	12.8	475	14.0	520	15.3	568	18.9	701
RHL 62 - 250	16	64	30.3	12.8	388	16.0	485	17.6	533	19.2	582	24.9	754
RHL 62 - 300	16	76	25.7	15.2	391	19.0	488	20.9	537	22.8	586	29.2	750
RHL 62 - 350	16	89	21.7	17.8	386	22.3	484	24.5	531	26.7	579	34.5	749
RHL 62 - 400	16	102	19.3	20.4	394	25.5	492	28.1	541	30.6	591	39.1	755
RHL 62 - 450	16	115	15.7	23.0	361	28.8	452	31.6	497	34.5	542	44.0	691
RHL 62 - 1200	3.1 x 2.5	305	7.1	61.0	433	76.3	542	83.9	596	91.5	650	103.6	736

RECTANGULAR WIRE SECTION

Estimated Life	Hole diameter (mm)									Series
	10	12.5	16	20	25	32	40	50	63	
+ 3,000,000 cycles	Load (N)									
	-	-	-	220	410	485	745	1560	-	RSL
	70	130	185	315	560	830	1130	2320	3250	RLL
	110	190	330	525	845	1520	2030	3050	5310	RML
	125	200	380	935	1560	2530	3270	4860	8440	RHL
	145	230	455	1090	1760	2800	4770	6820	11890	REL
	-	-	-	-	4090	6350	7700	12280	-	RUL
~ 1,500,000 cycles	Load (N)									
	-	-	-	290	540	650	1000	2120	-	RSL
	80	150	220	380	675	990	1360	2780	3900	RLL
	130	230	400	625	1010	1830	2430	3660	6370	RML
	155	250	480	1170	1950	3170	4090	6070	10560	RHL
	170	270	535	1280	2070	3290	5610	8030	13990	REL
	-	-	-	-	4910	7620	9240	14730	-	RUL
300 -500,000 cycles	Load (N)									
	-	-	-	330	610	730	1120	2380	-	RSL
	95	180	260	440	780	1160	1590	3240	4540	RLL
	150	255	450	705	1140	2060	2730	4120	7170	RML
	170	275	525	1290	2140	3480	4490	6670	11610	RHL
	195	305	605	1440	2320	3700	6300	9020	15740	REL
	-	-	-	-	5530	8570	10400	16580	-	RUL
100 -200,000 cycles	Load (N)									
	-	-	-	365	680	810	1250	2650	-	RSL
	110	200	300	500	890	1320	1810	3710	5190	RLL
	170	280	500	780	1260	2280	3040	4580	7960	RML
	185	300	570	1400	2340	3800	4900	7280	12660	RHL
	215	340	670	1605	2585	4120	7010	10040	17330	REL
	-	-	-	-	6140	9520	11550	18420	-	RUL



EN The stated service life values are obtained from in-house reliability tests but cannot be guaranteed due to the impossibility to consider all variables in the real working conditions of the springs. The selecting guideline is an approximate and preliminary method of spring selection, it is always recommended to refer to the standard tabs before using the spring.

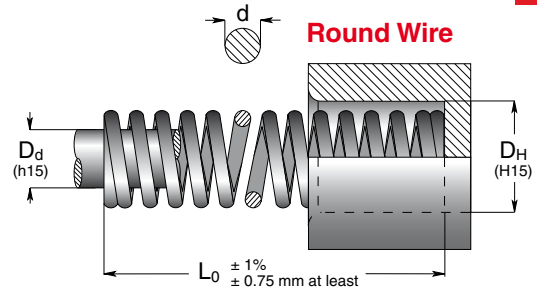
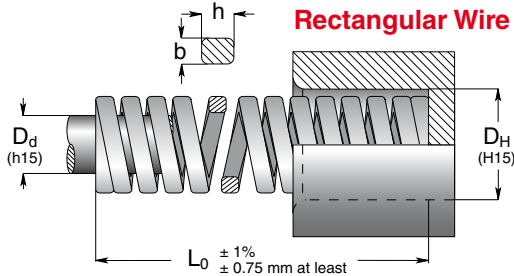
ES Los valores de duración indicados en la tabla se obtienen por pruebas internas y no son garantizados debido al elevado número de variables en las reales condiciones de trabajo. El método indicado para la selección de los muelles es aproximativo, por eso aconsejamos hacer siempre referencia a las tablas para la selección.

ROUND WIRE SECTION

Estimated Life	Hole diameter (mm)									Series
	10	12.5	16	20	25	32	40	50	63	
+3,000,000 cycles	Load (N)									
	25	50	100	-	-	-	-	-	-	CG
	70	130	175	-	-	-	-	-	-	CB
~1,500,000 cycles	Load (N)									
	30	60	115	-	-	-	-	-	-	CG
	90	150	210	-	-	-	-	-	-	CB
300,000 500,000 cycles	Load (N)									
	120	220	450	-	-	-	-	-	-	CR
	35	70	135	-	-	-	-	-	-	CG
100,000 200,000 cycles	Load (N)									
	100	170	240	-	-	-	-	-	-	CB
	135	240	500	-	-	-	-	-	-	CR
100,000 200,000 cycles	Load (N)									
	40	80	150	-	-	-	-	-	-	CG
	110	190	290	-	-	-	-	-	-	CB
	150	260	545	-	-	-	-	-	-	CR

OVAL WIRE SECTION

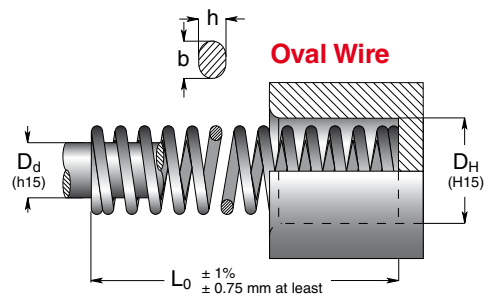
Estimated Life	Hole diameter (mm)									Series
	9.5	13	16	19.5	25.5	32	38.5	51	63	
Long	Load (N)									
	90	118	180	317	517	781	947	2457	3269	OLS
	93	143	252	433	644	1318	1631	2548	4160	OMS
	85	147	284	633	1132	1920	2197	3517	-	OHS
Medium	Load (N)									
	136	193	375	753	1524	2412	3944	6092	-	OES
	143	188	288	506	912	1249	1514	3929	5226	OLS
	116	180	316	543	806	1649	2040	3186	5204	OMS
Short	Load (N)									
	114	196	378	840	1507	2556	2925	4685	-	OHS
	181	256	500	1002	2028	3212	5251	8114	-	OES
	179	235	360	633	1140	1561	1892	4912	6533	OLS
	172	266	467	802	1192	2439	3018	4713	7696	OMS
	170	294	567	1260	2260	3835	4388	7028	-	OHS
	226	321	626	1253	2538	4018	6570	10149	-	OES



Code	D _H	D _d	L ₀	R	A	B	C	D	E	
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	% L ₀	% L ₀	% L ₀	% L ₀	% L ₀	approx. do not use
	b x h, d			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000		
	mm	mm	mm	N/mm	mm	N	N	N	N	

- D_H** hole diameter.
diámetro del agujero de alojamiento.
- D_d** rod diameter.
diámetro de la clavija de guía.
- b x h** cross wire section.
sección del perfil.
- d** sección del perfil.
- L₀** spring free length.
longitud libre del muelle.
- R** spring rate (load required for 1mm deflection).
carga (N) necesaria para desviar el muelle de 1 milímetro.
- A** advised working deflection for + 3,000,000 cycles.
desviación de trabajo aconsejada para + 3,000,000 ciclos.

- B** advised working deflection for ~ 1,500,000 cycles.
desviación de trabajo aconsejada para ~ 1,500,000 ciclos.
- C** advised working deflection for 300.000 - 500,000 cycles.
desviación de trabajo aconsejada para 300.000 - 500,000 ciclos.
- D** advised working deflection for 100.000 - 200,000 cycles.
desviación de trabajo aconsejada para 100.000 - 200,000 ciclos.
- E** solid deflection (approximate value).
deflexión por muelle a bloque (valor de aproximación).
- approx.**
quantity for standard packaging.
número de piezas por confección.

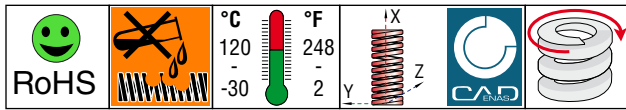
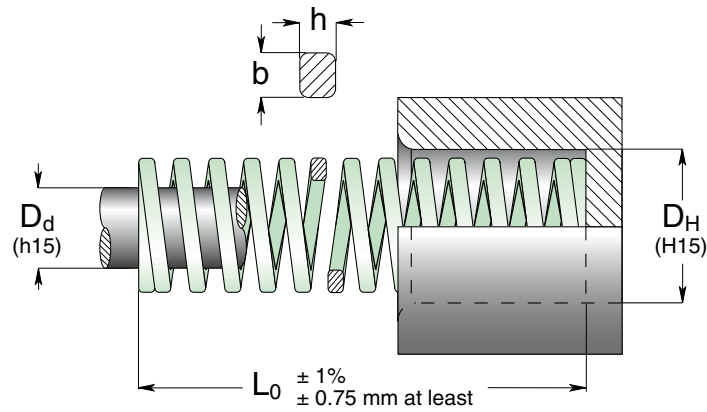


Code	D _H	D _d	L ₀	R	A	B	C	E
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	% L ₀	% L ₀	% L ₀	approx. do not use
	b x h			± 10%	Long Life	Medium Life	Max Deflection	
	mm	mm	mm	N/mm	mm	N	N	mm

- D_H** hole diameter.
diámetro del agujero de alojamiento.
- D_d** rod diameter.
diámetro de la clavija de guía.
- b x h** cross wire section.
sección del perfil.
- L₀** spring free length.
longitud libre del muelle.
- R** spring rate (load required for 1mm deflection).
carga (N) necesaria para desviar el muelle de 1 milímetro.

- A** advised working deflection for long spring life.
deflexión aconsejada para una larga duración del muelle.
- B** advised working deflection for medium spring life.
deflexión aconsejada para una media duración del muelle.
- C** maximum operating deflection.
deflexión máxima permitida.
- E** solid deflection (approximate value).
deflexión por muelle a bloque (valor de aproximación).
- approx.**
quantity for standard packaging.
número de piezas por confección.

- EN** Super-light load springs
Light green color
- ES** Muelles carga super-ligera
Color verde claro

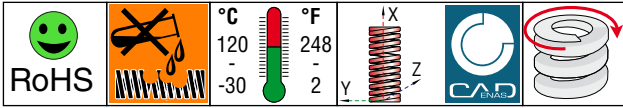
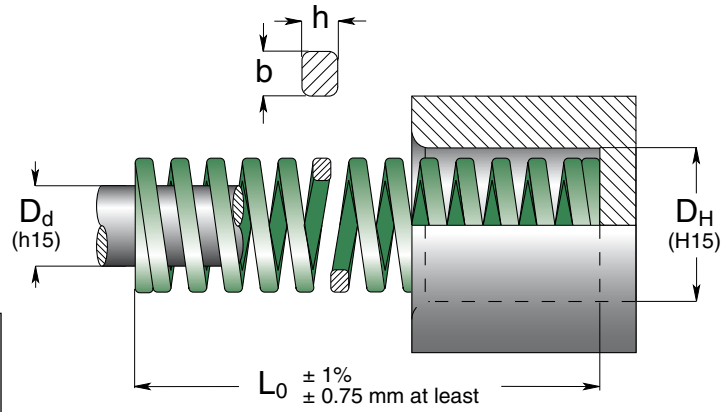


Code	D _H Hole Diameter	D _d Rod Diameter	L ₀ Free Length	R Spring Constant	A 30% L ₀		B 40% L ₀		C 45% L ₀		D 50% L ₀		E approx. do not use	
					mm	N	mm	N	mm	N	mm	N	mm	N
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000						
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N
RSL 37 - 100	10	5	25	8.5	7.5	64	10	85	11.2	96	12.5	106	14.1	120
RSL 37 - 125			32	6.5	9.6	62	12.8	83	14.4	94	16	104	18.5	120
RSL 37 - 150			38	5.5	11.4	63	15.2	84	17.1	94	19	105	22.5	124
RSL 37 - 175			44	4.8	13.2	63	17.6	84	19.8	95	22	106	23.2	111
RSL 37 - 200			51	4.2	15.3	64	20.4	86	22.9	96	25.5	107	27.5	116
RSL 37 - 250			64	3.3	19.2	63	25.6	84	28.8	95	32	106	34.0	112
RSL 37 - 300			76	2.7	22.8	62	30.4	82	34.2	92	38	103	40.4	109
RSL 37 - 1200	1.65 x 1.0		305	0.65	91.5	59	122	79	137.2	89	152.5	99	172.7	112
RSL 50 - 100	12.5	6.3	25	16	7.5	120	10	160	11.2	180	12.5	200	13.6	218
RSL 50 - 125			32	12.2	9.6	117	12.8	156	14.4	176	16	195	17.9	218
RSL 50 - 150			38	10.3	11.4	117	15.2	157	17.1	176	19	196	21.9	226
RSL 50 - 175			44	8.7	13.2	115	17.6	153	19.8	172	22	191	26.4	230
RSL 50 - 200			51	7.5	15.3	115	20.4	153	22.9	172	25.5	191	29.6	222
RSL 50 - 250			64	5.8	19.2	111	25.6	148	28.8	167	32	186	37.1	215
RSL 50 - 300			76	4.7	22.8	107	30.4	143	34.2	161	38	179	44.9	211
RSL 50 - 350			89	4.1	26.7	109	35.6	146	40.0	164	44.5	182	53.2	218
RSL 50 - 400			102	3.6	30.6	110	40.8	147	45.9	165	51	184	59.4	214
RSL 50 - 1200	2.3 x 1.3		305	1.25	91.5	114	122	153	137.2	172	152.5	191	186.6	233
RSL 62 - 100	16	8	25	20.2	7.5	152	10	202	11.2	227	12.5	253	14.0	283
RSL 62 - 125			32	16	9.6	154	12.8	205	14.4	230	16	256	18.7	299
RSL 62 - 150			38	12.3	11.4	140	15.2	187	17.1	210	19	234	22.0	271
RSL 62 - 175			44	10.6	13.2	140	17.6	187	19.8	210	22	233	26.1	277
RSL 62 - 200			51	8.9	15.3	136	20.4	182	22.9	204	25.5	227	30.4	271
RSL 62 - 250			64	7	19.2	134	25.6	179	28.8	202	32	224	38.8	272
RSL 62 - 300			76	5.8	22.8	132	30.4	176	34.2	198	38	220	46.4	269
RSL 62 - 350			89	4.8	26.7	128	35.6	171	40.0	192	44.5	214	54.2	260
RSL 62 - 400			102	4.1	30.6	125	40.8	167	45.9	188	51	209	62.4	256
RSL 62 - 450			115	3.9	34.5	135	46	179	51.7	202	57.5	224	70.6	275
RSL 62 - 1200			3.05 x 1.5		305	1.5	91.5	137	122	183	137.2	206	152.5	229
RSL 75 - 100	20	10	25	29.4	7.5	221	10.0	294	11.3	331	12.5	368	13.9	409
RSL 75 - 125			32	22.6	9.6	217	12.8	289	14.4	325	16.0	362	18.2	411
RSL 75 - 150			38	18.6	11.4	212	15.2	283	17.1	318	19.0	353	22.0	409
RSL 75 - 175			44	15.7	13.2	207	17.6	276	19.8	311	22.0	345	25.8	405
RSL 75 - 200			51	13.7	15.3	210	20.4	279	23.0	314	25.5	349	30.3	415
RSL 75 - 250			64	11.3	19.2	217	25.6	289	28.8	325	32.0	362	38.9	440
RSL 75 - 300			76	9.8	22.8	223	30.4	298	34.2	335	38.0	372	47.0	461
RSL 75 - 350			89	8.3	26.7	222	35.6	295	40.1	332	44.5	369	55.7	462
RSL 75 - 400			102	7.4	30.6	226	40.8	302	45.9	340	51.0	377	64.2	475
RSL 75 - 450			115	6.4	34.5	221	46.0	294	51.8	331	57.5	368	72.9	467
RSL 75 - 500			127	5.9	38.1	225	50.8	300	57.2	337	63.5	375	80.7	476
RSL 75 - 550			139	5.4	41.7	225	55.6	300	62.6	338	69.5	375	88.4	477
RSL 75 - 600			152	4.9	45.6	223	60.8	298	68.4	335	76.0	372	96.7	474
RSL 75 - 1200	4.3 x 1.7		305	2.5	91.5	229	122.0	305	137.3	343	152.5	381	196.3	491

Code	D _H	D _d	L ₀	R	A	B	C	D	E							
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	30% L ₀	40% L ₀	45% L ₀	50% L ₀	approx.							
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000	do not use							
	mm	mm	mm	N/mm	mm N	mm N	mm N	mm N	mm N							
RSL 100 - 100	25	12.5	25	53.9	7.5	404	10.0	539	11.3	606	12.5	674	12.9	695		
RSL 100 - 125			32	42.2	9.6	405	12.8	540	14.4	608	16.0	675	17.2	726		
RSL 100 - 150			38	35.8	11.4	408	15.2	544	17.1	612	19.0	680	20.7	741		
RSL 100 - 175			44	31.4	13.2	414	17.6	553	19.8	622	22.0	691	24.4	766		
RSL 100 - 200			51	27.0	15.3	413	20.4	551	23.0	620	25.5	689	28.5	770		
RSL 100 - 250			64	21.6	19.2	415	25.6	553	28.8	622	32.0	691	36.5	788		
RSL 100 - 300			76	18.1	22.8	413	30.4	550	34.2	619	38.0	688	43.9	795		
RSL 100 - 350			89	15.2	26.7	406	35.6	541	40.1	609	44.5	676	51.4	781		
RSL 100 - 400			102	13.2	30.6	404	40.8	539	45.9	606	51.0	673	59.3	783		
RSL 100 - 450			115	11.8	34.5	407	46.0	543	51.8	611	57.5	679	67.2	793		
RSL 100 - 500			127	10.6	38.1	404	50.8	538	57.2	606	63.5	673	74.4	789		
RSL 100 - 550			139	9.6	41.7	400	55.6	534	62.6	600	69.5	667	81.6	783		
RSL 100 - 600			152	8.8	45.6	401	60.8	535	68.4	602	76.0	669	89.5	788		
RSL 100 - 700			178	7.6	53.4	406	71.2	541	80.1	609	89.0	676	105.4	801		
RSL 100 - 800	203	6.7	60.9	408	81.2	544	91.4	612	101.5	680	120.7	809				
RSL 100 - 1200	5.4 x 2.2	305	4.4	91.5	403	122.0	537	137.3	604	152.5	671	182.4	803			
RSL 125 - 150	32	16	38	43.1	11.4	491	15.2	655	17.1	737	19.0	819	19.9	858		
RSL 125 - 175			44	37.3	13.2	492	17.6	656	19.8	739	22.0	821	23.5	877		
RSL 125 - 200			51	32.4	15.3	496	20.4	661	23.0	744	25.5	826	27.6	894		
RSL 125 - 250			64	25.5	19.2	490	25.6	653	28.8	734	32.0	816	35.2	898		
RSL 125 - 300			76	21.6	22.8	492	30.4	657	34.2	739	38.0	821	42.4	916		
RSL 125 - 350			89	18.1	26.7	483	35.6	644	40.1	725	44.5	805	50.0	905		
RSL 125 - 400			102	15.7	30.6	480	40.8	641	45.9	721	51.0	801	57.6	904		
RSL 125 - 450			115	14.2	34.5	490	46.0	653	51.8	735	57.5	817	65.5	930		
RSL 125 - 500			127	12.7	38.1	484	50.8	645	57.2	726	63.5	806	72.5	921		
RSL 125 - 550			139	11.6	41.7	484	55.6	645	62.6	726	69.5	806	79.4	921		
RSL 125 - 600			152	10.6	45.6	483	60.8	644	68.4	725	76.0	806	87.3	925		
RSL 125 - 700			178	9.0	53.4	481	71.2	641	80.1	721	89.0	801	102.9	926		
RSL 125 - 800			203	7.8	60.9	475	81.2	633	91.4	713	101.5	792	117.7	918		
RSL 125 - 1000			254	6.4	76.2	488	101.6	650	114.3	732	127.0	813	148.1	948		
RSL 125 - 1200	6.5 x 2.6	305	5.3	91.5	485	122.0	647	137.3	727	152.5	808	178.3	945			
RSL 150 - 200	40	20	51	48.1	15.3	736	20.4	981	23.0	1104	25.5	1227	28.0	1347		
RSL 150 - 250			64	39.2	19.2	753	25.6	1004	28.8	1129	32.0	1254	36.2	1419		
RSL 150 - 300			76	33.3	22.8	759	30.4	1012	34.2	1139	38.0	1265	43.7	1455		
RSL 150 - 350			89	28.4	26.7	758	35.6	1011	40.1	1137	44.5	1264	51.7	1468		
RSL 150 - 400			102	24.5	30.6	750	40.8	1000	45.9	1125	51.0	1250	59.8	1465		
RSL 150 - 450			115	22.1	34.5	762	46.0	1017	51.8	1144	57.5	1271	67.9	1501		
RSL 150 - 500			127	19.6	38.1	747	50.8	996	57.2	1120	63.5	1245	75.2	1474		
RSL 150 - 550			139	17.7	41.7	738	55.6	984	62.6	1107	69.5	1230	82.4	1458		
RSL 150 - 600			152	16.2	45.6	739	60.8	985	68.4	1108	76.0	1231	90.6	1468		
RSL 150 - 700			178	13.7	53.4	732	71.2	975	80.1	1097	89.0	1219	106.5	1459		
RSL 150 - 800			203	12.3	60.9	749	81.2	999	91.4	1124	101.5	1248	122.2	1503		
RSL 150 - 1000			254	9.8	76.2	747	101.6	996	114.3	1120	127.0	1245	153.6	1505		
RSL 150 - 1200			8.0 x 3.4	305	8.3	91.5	759	122.0	1013	137.3	1139	152.5	1266	185.4	1539	
RSL 200 - 250			50	25	64	86.3	19.2	1657	25.6	2209	28.8	2485	32.0	2762	35.1	3029
RSL 200 - 300	76	70.6			22.8	1610	30.4	2146	34.2	2415	38.0	2683	42.2	2979		
RSL 200 - 350	89	59.8			26.7	1597	35.6	2129	40.1	2395	44.5	2661	50.3	3008		
RSL 200 - 400	102	52.0			30.6	1591	40.8	2122	45.9	2387	51.0	2652	58.4	3037		
RSL 200 - 450	115	46.1			34.5	1590	46.0	2121	51.8	2386	57.5	2651	66.1	3047		
RSL 200 - 500	127	42.2			38.1	1608	50.8	2144	57.2	2412	63.5	2680	73.8	3114		
RSL 200 - 550	139	38.2			41.7	1593	55.6	2124	62.6	2389	69.5	2655	80.9	3090		
RSL 200 - 600	152	34.3			45.6	1564	60.8	2085	68.4	2346	76.0	2607	89.0	3053		
RSL 200 - 700	178	29.4			53.4	1570	71.2	2093	80.1	2355	89.0	2617	105.3	3096		
RSL 200 - 800	203	25.5			60.9	1553	81.2	2071	91.4	2329	101.5	2588	120.6	3075		
RSL 200 - 1000	254	20.6			76.2	1570	101.6	2093	114.3	2355	127.0	2616	152.2	3135		
RSL 200 - 1200	10.5 x 4.1	305			17.2	91.5	1574	122.0	2098	137.3	2361	152.5	2623	183.7	3160	
RSL 250 - 300	63	38			76	57.8	22.8	1318	30.4	1757	34.2	1977	38	2196	47.3	2734
RSL 250 - 350					89	51.4	26.7	1372	35.6	1830	40.0	2059	44.5	2287	54.9	2822
RSL 250 - 400			102	44.4	30.6	1359	40.8	1812	45.9	2038	51	2264	64.1	2846		
RSL 250 - 450			115	38	34.5	1311	46	1748	51.7	1967	57.5	2185	75.6	2873		
RSL 250 - 500			127	33.2	38.1	1265	50.8	1687	57.1	1897	63.5	2108	82.6	2742		
RSL 250 - 600			152	27.4	45.6	1249	60.8	1666	68.4	1874	76	2082	99.8	2735		
RSL 250 - 700			178	24	53.4	1282	71.2	1709	80.1	1922	89	2136	118.4	2842		
RSL 250 - 800			203	21	60.9	1279	81.2	1705	91.3	1918	101.5	2132	135.9	2854		
RSL 250 - 1000			254	16.4	76.2	1250	101.6	1666	114.3	1875	127	2083	172.8	2834		
RSL 250 - 1200			11 x 4.9	305	13.6	91.5	1244	122	1659	137.2	1867	152.5	2074	208.6	2837	

EN Light load springs
Green color

ES Muelles carga ligera
Color verde

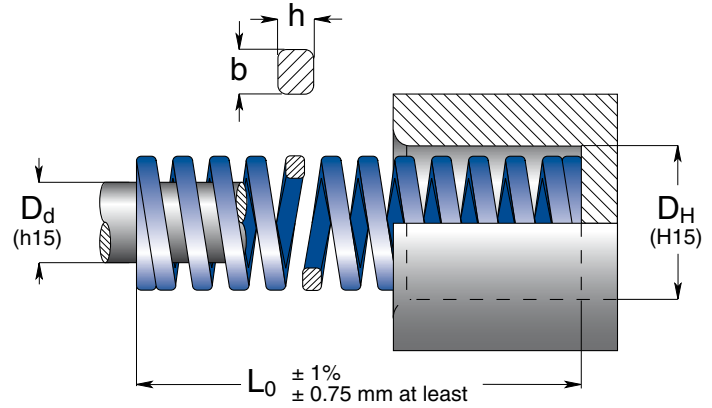
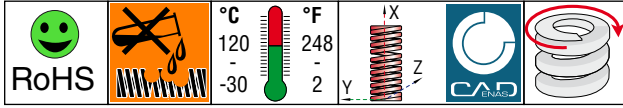


Code	D _H		D _d	L ₀	R	A		B		C		D		E	
	Hole Diameter					Free Length	Spring Constant	25% L ₀		30% L ₀		35% L ₀		40% L ₀	
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000							
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N	
RLL 37 - 100	10	5	25	10	6.3	63	7.5	75	8.8	88	10.0	100	13.5	135	
RLL 37 - 125			32	8.5	8.0	68	9.6	82	11.2	95	12.8	109	17.5	149	
RLL 37 - 150			38	6.8	9.5	65	11.4	78	13.3	90	15.2	103	20.8	141	
RLL 37 - 175			44	6.0	11.0	66	13.2	79	15.4	92	17.6	106	23.9	143	
RLL 37 - 200			51	5.0	12.8	64	15.3	77	17.9	89	20.4	102	28.9	145	
RLL 37 - 250			64	4.3	16.0	69	19.2	83	22.4	96	25.6	110	36.1	155	
RLL 37 - 300			76	3.2	19.0	61	22.8	73	26.6	85	30.4	97	43.2	138	
RLL 37 - 1200			1.7 x 1.1	305	1.1	76.3	84	91.5	101	106.8	117	122.0	134	178.7	197
RLL 50 - 100	12.5	6.3	25	17.9	6.3	113	7.5	134	8.8	157	10.0	179	13.2	236	
RLL 50 - 125			32	16.4	8.0	131	9.6	157	11.2	184	12.8	210	18.0	295	
RLL 50 - 150			38	13.6	9.5	129	11.4	155	13.3	181	15.2	207	21.0	286	
RLL 50 - 175			44	12.1	11.0	133	13.2	160	15.4	186	17.6	213	24.0	290	
RLL 50 - 200			51	11.4	12.8	146	15.3	174	17.9	203	20.4	233	28.7	327	
RLL 50 - 250			64	9.3	16.0	149	19.2	179	22.4	208	25.6	238	35.8	333	
RLL 50 - 300			76	7.1	19.0	135	22.8	162	26.6	189	30.4	216	42.7	303	
RLL 50 - 350			89	5.4	22.3	120	26.7	144	31.2	168	35.6	192	50.4	272	
RLL 50 - 400	102	4.1	25.5	105	30.6	125	35.7	146	40.8	167	58.4	239			
RLL 50 - 1200	2.4 x 1.4	305	1.4	76.3	107	91.5	128	106.8	149	122.0	171	172.0	241		
RLL 62 - 100	16	8	25	23.4	6.3	147	7.5	176	8.8	205	10.0	234	12.6	295	
RLL 62 - 125			32	22.9	8.0	183	9.6	220	11.2	256	12.8	293	16.4	376	
RLL 62 - 150			38	19.3	9.5	183	11.4	220	13.3	257	15.2	293	19.7	380	
RLL 62 - 175			44	17.1	11.0	188	13.2	226	15.4	263	17.6	301	22.5	385	
RLL 62 - 200			51	15.7	12.8	201	15.3	240	17.9	280	20.4	320	26.3	413	
RLL 62 - 250			64	10.7	16.0	171	19.2	205	22.4	240	25.6	274	33.3	356	
RLL 62 - 300			76	10.0	19.0	190	22.8	228	26.6	266	30.4	304	40.2	402	
RLL 62 - 350			89	8.6	22.3	192	26.7	230	31.2	268	35.6	306	47.6	409	
RLL 62 - 400	102	7.8	25.5	199	30.6	239	35.7	278	40.8	318	55.4	432			
RLL 62 - 450	115	6.6	28.8	190	34.5	228	40.3	266	46.0	304	60.8	401			
RLL 62 - 1200	3.2 x 1.5	305	2.5	76.3	191	91.5	229	106.8	267	122.0	305	165.3	413		
RLL 75 - 100	20	10	25	55.8	6.3	352	7.5	419	8.8	488	10.0	558	12.1	675	
RLL 75 - 125			32	45.0	8.0	360	9.6	432	11.2	504	12.8	576	15.3	689	
RLL 75 - 150			38	33.3	9.5	316	11.4	380	13.3	443	15.2	506	18.9	629	
RLL 75 - 175			44	30.0	11.0	330	13.2	396	15.4	462	17.6	528	21.5	645	
RLL 75 - 200			51	24.5	12.8	314	15.3	375	17.9	437	20.4	500	25.0	613	
RLL 75 - 250			64	20.0	16.0	320	19.2	384	22.4	448	25.6	512	31.1	622	
RLL 75 - 300			76	16.0	19.0	304	22.8	365	26.6	426	30.4	486	37.3	597	
RLL 75 - 350			89	14.0	22.3	312	26.7	374	31.2	436	35.6	498	44.5	623	
RLL 75 - 400	102	12.0	25.5	306	30.6	367	35.7	428	40.8	490	51.1	613			
RLL 75 - 450	115	10.9	28.8	314	34.5	376	40.3	439	46.0	501	58.2	634			
RLL 75 - 500	127	9.5	31.8	302	38.1	362	44.5	422	50.8	483	64.9	617			
RLL 75 - 550	139	8.4	35.0	294	42.0	353	48.7	409	56.0	470	71.5	601			
RLL 75 - 600	152	7.5	38.0	285	45.6	342	53.2	399	60.8	456	78.8	591			
RLL 75 - 700	178	7.25	44.5	322	53.4	387.2	62.3	451.7	71.2	516.2	93.1	674			
RLL 75 - 1200	4.0 x 2.1	305	4.0	76.3	305	91.5	366	106.8	427	122.0	488	157.4	630		

Code	D _H	D _d	L ₀	R	A		B		C		D		E			
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	25% L ₀	N	30% L ₀	N	35% L ₀	N	40% L ₀	N	approx. do not use	N		
	b x h			± 10%	+ 3,000,000		~ 1,500,000		300 - 500,000		100 - 200,000					
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N		
RLL 100 - 100	25	12.5	25	100.0	6.3	630	7.5	750	8.8	875	10.0	1000	11.9	1190		
RLL 100 - 125			32	80.3	8.0	642	9.6	771	11.2	899	12.8	1028	16.0	1285		
RLL 100 - 150			38	62.0	9.5	589	11.4	707	13.3	825	15.2	942	18.3	1135		
RLL 100 - 175			44	52.9	11.0	582	13.2	698	15.4	815	17.6	931	21.4	1132		
RLL 100 - 200			51	44.0	12.8	563	15.3	673	17.9	785	20.4	898	24.9	1096		
RLL 100 - 250			64	35.2	16.0	563	19.2	676	22.4	788	25.6	901	31.4	1105		
RLL 100 - 300			76	28.0	19.0	532	22.8	638	26.6	745	30.4	851	37.5	1050		
RLL 100 - 350			89	24.0	22.3	535	26.7	641	31.2	748	35.6	854	43.5	1044		
RLL 100 - 400			102	21.1	25.5	538	30.6	646	35.7	753	40.8	861	51.1	1078		
RLL 100 - 450			115	18.7	28.8	539	34.5	645	40.3	753	46.0	860	58.1	1086		
RLL 100 - 500			127	16.7	31.8	531	38.1	636	44.5	742	50.8	848	64.1	1070		
RLL 100 - 550			139	15.3	35.0	536	42.0	643	48.7	744	56.0	857	70.4	1077		
RLL 100 - 600			152	14.0	38.0	532	45.6	638	53.2	745	60.8	851	77.1	1079		
RLL 100 - 700			178	12.5	44.5	556	53.4	668	62.3	779	71.2	890	93.1	1164		
RLL 100 - 800	203	10.4	50.8	528	60.9	633	71.1	739	81.2	844	102.7	1068				
RLL 100 - 1200	5.4 x 2.7	305	7.0	76.3	534	91.5	641	106.8	747	122.0	854	155.9	1091			
RLL 125 - 150	32	16	38	94.0	9.5	893	11.4	1072	13.3	1250	15.2	1429	18.3	1720		
RLL 125 - 175			44	79.5	11.0	875	13.2	1049	15.4	1224	17.6	1399	21.5	1709		
RLL 125 - 200			51	67.0	12.8	858	15.3	1025	17.9	1196	20.4	1367	25.5	1709		
RLL 125 - 250			64	53.0	16.0	848	19.2	1018	22.4	1187	25.6	1357	31.9	1691		
RLL 125 - 300			76	44.0	19.0	836	22.8	1003	26.6	1170	30.4	1338	38.6	1698		
RLL 125 - 350			89	37.2	22.3	830	26.7	993	31.2	1159	35.6	1324	46.5	1730		
RLL 125 - 400			102	32.0	25.5	816	30.6	979	35.7	1142	40.8	1306	53.2	1702		
RLL 125 - 450			115	29.0	28.8	835	34.5	1001	40.3	1167	46.0	1334	60.0	1740		
RLL 125 - 500			127	25.0	31.8	795	38.1	953	44.5	1111	50.8	1270	66.7	1668		
RLL 125 - 550			139	23.0	35.0	805	42.0	966	48.7	1119	56.0	1288	71.8	1651		
RLL 125 - 600			152	21.5	38.0	817	45.6	980	53.2	1144	60.8	1307	78.5	1688		
RLL 125 - 700			178	18.2	44.5	810	53.4	972	62.3	1134	71.2	1296	94.4	1718		
RLL 125 - 800			203	15.8	50.8	803	60.9	962	71.1	1123	81.2	1283	107.1	1692		
RLL 125 - 1000			254	12.5	63.5	794	76.2	953	88.9	1111	101.6	1270	136.5	1706		
RLL 125 - 1200	6.8 x 3.3	305	10.3	76.3	786	91.5	942	106.8	1100	122.0	1257	162.7	1676			
RLL 150 - 200	40	20	51	92.0	12.8	1178	15.3	1408	17.9	1642	20.4	1877	25.5	2346		
RLL 150 - 250			64	73.0	16.0	1168	19.2	1402	22.4	1635	25.6	1869	31.4	2292		
RLL 150 - 300			76	63.0	19.0	1197	22.8	1436	26.6	1676	30.4	1915	37.8	2381		
RLL 150 - 350			89	51.0	22.3	1137	26.7	1362	31.2	1589	35.6	1816	44.3	2259		
RLL 150 - 400			102	43.0	25.5	1097	30.6	1316	35.7	1535	40.8	1754	50.7	2180		
RLL 150 - 450			115	39.6	28.8	1140	34.5	1366	40.3	1594	46.0	1822	58.1	2301		
RLL 150 - 500			127	37.0	31.8	1177	38.1	1410	44.5	1645	50.8	1880	64.6	2390		
RLL 150 - 550			139	32.0	35.0	1120	42.0	1344	48.7	1557	56.0	1792	70.1	2243		
RLL 150 - 600			152	28.0	38.0	1064	45.6	1277	53.2	1490	60.8	1702	76.6	2145		
RLL 150 - 700			178	25.2	44.5	1121	53.4	1346	62.3	1570	71.2	1794	90.4	2278		
RLL 150 - 800			203	22.7	50.8	1153	60.9	1382	71.1	1613	81.2	1843	102.4	2324		
RLL 150 - 1000			254	17.0	63.5	1080	76.2	1295	88.9	1511	101.6	1727	128.8	2190		
RLL 150 - 1200			8.1 x 4.0	305	14.8	76.3	1129	91.5	1354	106.8	1580	122.0	1806	156.1	2310	
RLL 200 - 250			50	25	64	156	16.0	2496	19.2	2995	22.4	3494	25.6	3994	31.0	4836
RLL 200 - 300	76	125			19.0	2375	22.8	2850	26.6	3325	30.4	3800	37.2	4650		
RLL 200 - 350	89	109			22.3	2431	26.7	2910	31.2	3395	35.6	3880	43.6	4752		
RLL 200 - 400	102	94.0			25.5	2397	30.6	2876	35.7	3356	40.8	3835	50.3	4728		
RLL 200 - 450	115	81.0			28.8	2333	34.5	2795	40.3	3260	46.0	3726	58.1	4706		
RLL 200 - 500	127	71.0			31.8	2258	38.1	2705	44.5	3156	50.8	3607	63.7	4523		
RLL 200 - 550	139	66.5			35.0	2328	42.0	2793	48.7	3235	56.0	3724	69.5	4622		
RLL 200 - 600	152	60.0			38.0	2280	45.6	2736	53.2	3192	60.8	3648	76.5	4590		
RLL 200 - 700	178	52.0			44.5	2314	53.4	2777	62.3	3240	71.2	3702	91.9	4779		
RLL 200 - 800	203	44.0			50.8	2235	60.9	2680	71.1	3126	81.2	3573	104.7	4607		
RLL 200 - 1000	254	35.0			63.5	2223	76.2	2667	88.9	3112	101.6	3556	130.6	4571		
RLL 200 - 1200	10.9 x 5.3	305			28.5	76.3	2175	91.5	2608	106.8	3042	122.0	3477	154.9	4415	
RLL 250 - 300	63	38			76	189	19.0	3591	22.8	4309	26.6	5027	30.4	5746	36.5	6899
RLL 250 - 350					89	158	22.3	3523	26.7	4219	31.2	4922	35.6	5625	43.4	6857
RLL 250 - 400			102	131	25.5	3341	30.6	4009	35.7	4677	40.8	5345	49.7	6511		
RLL 250 - 450			115	116	28.8	3341	34.5	4002	40.3	4669	46.0	5336	55.6	6450		
RLL 250 - 500			127	103	31.8	3275	38.1	3924	44.5	4578	50.8	5232	62.7	6458		
RLL 250 - 600			152	84.3	38.0	3203	45.6	3844	53.2	4485	60.8	5125	77.1	6500		
RLL 250 - 700			178	71.5	44.5	3182	53.4	3818	62.3	4454	71.2	5091	92.2	6592		
RLL 250 - 800			203	61.7	50.8	3134	60.9	3758	71.1	4384	81.2	5010	103.5	6386		
RLL 250 - 1000			254	47.0	63.5	2985	76.2	3581	88.9	4178	101.6	4775	130.4	6129		
RLL 250 - 1200			11.0 x 7.8	305	38.2	76.3	2915	91.5	3495	106.8	4078	122.0	4660	157.4	6013	

EN Medium load springs
Blue color

ES Muelles carga mediana
Color azul marino



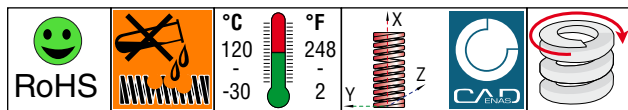
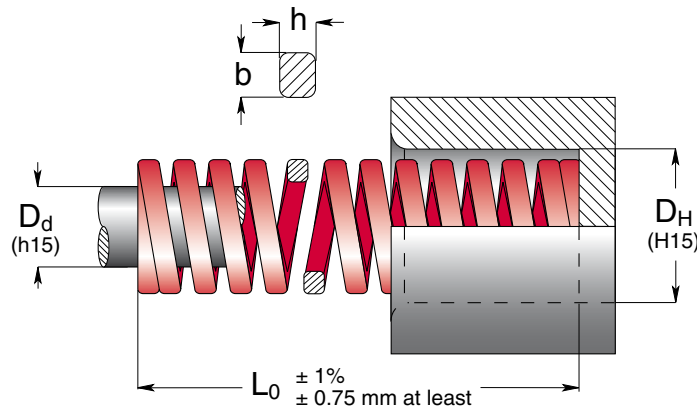
Code	D _H	D _d	L ₀	R	A		B		C		D		E	
					25% L ₀	30% L ₀	33.75% L ₀	37.5% L ₀	approx. do not use					
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	+ 3,000,000		~ 1,500,000		300 - 500,000		100 - 200,000		do not use	
	b x h			± 10%	mm	N	mm	N	mm	N	mm	N	mm	N
RML 37 - 100	10	5	25	16.0	6.3	101	7.5	120	8.4	135	9.4	150	10.2	163
RML 37 - 125			32	13.0	8.0	104	9.6	125	10.8	140	12.0	156	14.2	185
RML 37 - 150			38	11.9	9.5	113	11.4	136	12.8	153	14.3	170	16.8	200
RML 37 - 175			44	10.3	11.0	113	13.2	136	14.9	153	16.5	170	19.4	200
RML 37 - 200			51	8.9	12.8	114	15.3	136	17.2	153	19.1	170	23.4	208
RML 37 - 250			64	7.5	16.0	120	19.2	144	21.6	162	24.0	180	28.2	212
RML 37 - 300			76	5.3	19.0	101	22.8	121	25.7	136	28.5	151	34.2	181
RML 37 - 1200	1.9 x 1.3		305	1.6	76.3	122	91.5	146	102.9	165	114.4	183	133.8	214
RML 50 - 100	12.5	6.3	25	30.0	6.3	189	7.5	225	8.4	253	9.4	282	11.9	357
RML 50 - 125			32	24.8	8.0	198	9.6	238	10.8	268	12.0	298	16.2	402
RML 50 - 150			38	21.4	9.5	203	11.4	244	12.8	274	14.3	306	18.7	400
RML 50 - 175			44	18.5	11.0	204	13.2	244	14.9	275	16.5	305	21.3	394
RML 50 - 200			51	15.5	12.8	198	15.3	237	17.2	267	19.1	296	25.6	397
RML 50 - 250			64	12.1	16.0	194	19.2	232	21.6	261	24.0	290	32.4	392
RML 50 - 300			76	10.2	19.0	194	22.8	233	25.7	262	28.5	291	39.0	398
RML 50 - 350			89	8.4	22.3	187	26.7	224	30.0	252	33.4	281	45.9	386
RML 50 - 400			102	6.3	25.5	161	30.6	193	34.4	217	38.3	241	52.3	329
RML 50 - 1200	2.5 x 1.5		305	2.1	76.3	160	91.5	192	102.9	216	114.4	240	152.5	320
RML 62 - 100	16	8	25	49.4	6.3	311	7.5	371	8.4	417	9.4	464	10.5	519
RML 62 - 125			32	37.1	8.0	297	9.6	356	10.8	401	12.0	445	13.2	490
RML 62 - 150			38	33.9	9.5	322	11.4	386	12.8	435	14.3	485	17.2	583
RML 62 - 175			44	30.0	11.0	330	13.2	396	14.9	446	16.5	495	19.4	582
RML 62 - 200			51	26.4	12.8	338	15.3	404	17.2	454	19.1	504	24.2	639
RML 62 - 250			64	20.5	16.0	328	19.2	394	21.6	443	24.0	492	29.2	599
RML 62 - 300			76	17.8	19.0	338	22.8	406	25.7	457	28.5	507	36.3	646
RML 62 - 350			89	15.2	22.3	339	26.7	406	30.0	457	33.4	508	41.7	634
RML 62 - 400			102	13.5	25.5	344	30.6	413	34.4	465	38.3	517	48.9	660
RML 62 - 450			115	11.8	28.8	340	34.5	407	38.8	458	43.1	509	53.1	627
RML 62 - 1200			3.2 x 2.0		305	4.8	76.3	366	91.5	439	102.9	494	114.4	549
RML 75 - 100	20	10	25	98.0	6.3	617	7.5	735	8.4	827	9.4	921	10.5	1029
RML 75 - 125			32	72.6	8.0	581	9.6	697	10.8	784	12.0	871	13.9	1009
RML 75 - 150			38	56.0	9.5	532	11.4	638	12.8	718	14.3	801	16.6	930
RML 75 - 175			44	47.5	11.0	523	13.2	627	14.9	705	16.5	784	18.8	893
RML 75 - 200			51	41.7	12.8	534	15.3	638	17.2	718	19.1	796	23.1	963
RML 75 - 250			64	32.3	16.0	517	19.2	620	21.6	698	24.0	775	27.5	888
RML 75 - 300			76	25.1	19.0	477	22.8	572	25.7	644	28.5	715	33.8	848
RML 75 - 350			89	22.0	22.3	491	26.7	587	30.0	661	33.4	735	39.7	873
RML 75 - 400			102	19.8	25.5	505	30.6	606	34.4	682	38.3	758	47.3	937
RML 75 - 450			115	18.1	28.8	521	34.5	624	38.8	703	43.1	780	52.5	950
RML 75 - 500			127	16.6	31.8	528	38.1	632	42.9	712	47.6	790	56.9	945
RML 75 - 550			139	15.1	35.0	529	42.0	634	46.9	708	52.5	793	62.1	938
RML 75 - 600			152	13.2	38.0	500	45.6	600	51.3	677	57.0	750	67.6	889
RML 75 - 1200			4.1 x 2.4		305	6.1	76.3	465	91.5	558	102.9	628	114.4	698



Code	D _H	D _d	L ₀	R	A	B	C	D	E	RML Metric					
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	25% L ₀	30% L ₀	33.75% L ₀	37.5% L ₀	approx. do not use						
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000							
	mm	mm	mm	N/mm	mm	mm	mm	mm	mm	N	N				
RML 100 - 100	25	12.5	25	147	6.3	926	7.5	1103	8.4	1240	9.4	1382	10.2	1499	
RML 100 - 125			32	118	8.0	944	9.6	1133	10.8	1274	12.0	1416	13.7	1617	
RML 100 - 150			38	93.0	9.5	884	11.4	1060	12.8	1193	14.3	1330	15.7	1460	
RML 100 - 175			44	80.8	11.0	889	13.2	1067	14.9	1200	16.5	1333	18.2	1471	
RML 100 - 200			51	68.6	12.8	878	15.3	1050	17.2	1181	19.1	1310	21.7	1489	
RML 100 - 250			64	53.0	16.0	848	19.2	1018	21.6	1145	24.0	1272	26.0	1378	
RML 100 - 300			76	43.2	19.0	821	22.8	985	25.7	1108	28.5	1231	32.3	1395	
RML 100 - 350			89	38.2	22.3	852	26.7	1020	30.0	1147	33.4	1276	38.0	1452	
RML 100 - 400			102	33.0	25.5	842	30.6	1010	34.4	1136	38.3	1264	43.0	1419	
RML 100 - 450			115	28.0	28.8	806	34.5	966	38.8	1087	43.1	1207	48.6	1361	
RML 100 - 500			127	25.9	31.8	824	38.1	987	42.9	1110	47.6	1233	53.7	1391	
RML 100 - 550			139	23.2	35.0	812	42.0	974	46.9	1088	52.5	1218	59.4	1378	
RML 100 - 600			152	20.8	38.0	790	45.6	948	51.3	1067	57.0	1186	63.8	1327	
RML 100 - 700			178	17.8	44.5	792	53.4	951	60.1	1069	66.8	1189	76.6	1363	
RML 100 - 800	203	15.8	50.8	803	60.9	962	68.5	1082	76.1	1202	88.4	1397			
RML 100 - 1200	5.4 x 3.3	305	10.2	76.3	778	91.5	933	102.9	1050	114.4	1167	135.1	1378		
RML 125 - 150	32	16	38	185	9.5	1758	11.4	2109	12.8	2373	14.3	2646	16.3	3016	
RML 125 - 175			44	158	11.0	1738	13.2	2086	14.9	2346	16.5	2607	18.9	2986	
RML 125 - 200			51	134	12.8	1715	15.3	2050	17.2	2306	19.1	2559	23.1	3095	
RML 125 - 250			64	99.0	16.0	1584	19.2	1901	21.6	2138	24.0	2376	28.5	2822	
RML 125 - 300			76	80.5	19.0	1530	22.8	1835	25.7	2065	28.5	2294	34.2	2753	
RML 125 - 350			89	69.1	22.3	1541	26.7	1845	30.0	2076	33.4	2308	40.4	2792	
RML 125 - 400			102	58.8	25.5	1499	30.6	1799	34.4	2024	38.3	2252	48.0	2822	
RML 125 - 450			115	51.5	28.8	1483	34.5	1777	38.8	1999	43.1	2220	54.3	2796	
RML 125 - 500			127	44.8	31.8	1425	38.1	1707	42.9	1920	47.6	2132	59.2	2652	
RML 125 - 550			139	42.3	35.0	1481	42.0	1777	46.9	1984	52.5	2221	65.3	2762	
RML 125 - 600			152	37.8	38.0	1436	45.6	1724	51.3	1939	57.0	2155	73.0	2759	
RML 125 - 700			178	32.5	44.5	1446	53.4	1736	60.1	1952	66.8	2171	84.5	2746	
RML 125 - 800			203	28.9	50.8	1468	60.9	1760	68.5	1980	76.1	2199	96.9	2800	
RML 125 - 1000			254	21.4	63.5	1359	76.2	1631	85.7	1835	95.3	2039	120.9	2587	
RML 125 - 1200	6.8 x 4.0	305	18.3	76.3	1396	91.5	1674	102.9	1884	114.4	2094	146.9	2688		
RML 150 - 200	40	20	51	181.6	12.8	2324	15.3	2778	17.2	3126	19.1	3469	21.4	3886	
RML 150 - 250			64	140.0	16.0	2240	19.2	2688	21.6	3024	24.0	3360	26.8	3752	
RML 150 - 300			76	108.0	19.0	2052	22.8	2462	25.7	2770	28.5	3078	32.7	3532	
RML 150 - 350			89	90.7	22.3	2023	26.7	2422	30.0	2724	33.4	3029	39.0	3537	
RML 150 - 400			102	81.0	25.5	2066	30.6	2479	34.4	2788	38.3	3102	44.1	3572	
RML 150 - 450			115	71.8	28.8	2068	34.5	2477	38.8	2787	43.1	3095	50.6	3633	
RML 150 - 500			127	62.7	31.8	1994	38.1	2389	42.9	2687	47.6	2985	55.9	3505	
RML 150 - 550			139	57.5	35.0	2013	42.0	2415	46.9	2697	52.5	3019	61.8	3554	
RML 150 - 600			152	51.6	38.0	1961	45.6	2353	51.3	2647	57.0	2941	67.5	3483	
RML 150 - 700			178	44.1	44.5	1962	53.4	2355	60.1	2649	66.8	2946	77.2	3405	
RML 150 - 800			203	36.7	50.8	1864	60.9	2235	68.5	2514	76.1	2793	91.8	3369	
RML 150 - 1000			254	30.1	63.5	1911	76.2	2294	85.7	2580	95.3	2869	112.7	3392	
RML 150 - 1200			8.2 x 4.7	305	24.6	76.3	1877	91.5	2251	102.9	2532	114.4	2814	138.1	3397
RML 200 - 250			50	25	64	209	16.0	3344	19.2	4013	21.6	4514	24.0	5016	28.2
RML 200 - 300	76	168			19.0	3192	22.8	3830	25.7	4309	28.5	4788	34.9	5863	
RML 200 - 350	89	140			22.3	3122	26.7	3738	30.0	4205	33.4	4676	39.2	5488	
RML 200 - 400	102	119			25.5	3035	30.6	3641	34.4	4097	38.3	4558	47.3	5629	
RML 200 - 450	115	106			28.8	3053	34.5	3657	38.8	4114	43.1	4569	52.6	5576	
RML 200 - 500	127	97.0			31.8	3085	38.1	3696	42.9	4158	47.6	4617	59.8	5801	
RML 200 - 550	139	87.0			35.0	3045	42.0	3654	46.9	4081	52.5	4568	65.1	5664	
RML 200 - 600	152	80.0			38.0	3040	45.6	3648	51.3	4104	57.0	4560	70.8	5664	
RML 200 - 700	178	69.5			44.5	3093	53.4	3711	60.1	4175	66.8	4643	84.2	5852	
RML 200 - 800	203	59.8			50.8	3038	60.9	3642	68.5	4097	76.1	4551	96.5	5771	
RML 200 - 900	229	50.9			57.3	2917	68.7	3497	77.3	3934	85.9	4372	108.5	5523	
RML 200 - 1000	254	43.9			63.5	2788	76.2	3345	85.7	3763	95.3	4184	121.8	5347	
RML 200 - 1200	11.1 x 5.8	305			38.6	76.3	2945	91.5	3532	102.9	3973	114.4	4416	146.8	5666
RML 250 - 300	63	38			76	312	19.0	5928	22.8	7114	25.7	8003	28.5	8892	30.7
RML 250 - 350			89	260	22.3	5798	26.7	6942	30.0	7810	33.4	8684	36.5	9490	
RML 250 - 400			102	221	25.5	5636	30.6	6763	34.4	7608	38.3	8464	43.6	9636	
RML 250 - 450			115	187	28.8	5386	34.5	6452	38.8	7258	43.1	8060	48.9	9144	
RML 250 - 500			127	168	31.8	5342	38.1	6401	42.9	7201	47.6	7997	54.2	9106	
RML 250 - 600			152	136	38.0	5168	45.6	6202	51.3	6977	57.0	7752	65.7	8935	
RML 250 - 700			178	114	44.5	5073	53.4	6088	60.1	6849	66.8	7615	76.5	8721	
RML 250 - 800			203	100	50.8	5080	60.9	6090	68.5	6851	76.1	7610	88.0	8800	
RML 250 - 900			229	89.2	57.3	5111	68.7	6128	77.3	6894	85.9	7662	103.9	9268	
RML 250 - 1000			254	78.4	63.5	4978	76.2	5974	85.7	6721	95.3	7472	112.4	8812	
RML 250 - 1200			11.5 x 9.1	305	64.7	76.3	4937	91.5	5920	102.9	6660	114.4	7402	133.8	8657

EN Heavy load springs
Red color

ES Muelles carga fuerte
Color rojo



Code	D _H D _d		L ₀	R	A	B	C	D	E							
	Hole Diameter	Rod Diameter														
b x h		Free Length	Spring Constant	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000	approx. do not use								
mm	mm							mm	N/mm	mm	N	mm	N			
RHL 37 - 100	10	5	25	22.1	5.0	111	6.3	139	6.9	152	7.5	166	9.2	203		
RHL 37 - 125			32	17.5	6.4	112	8.0	140	8.8	154	9.6	168	12.1	212		
RHL 37 - 150			38	17.1	7.6	130	9.5	162	10.5	179	11.4	195	13.2	226		
RHL 37 - 175			44	15.0	8.8	132	11.0	165	12.1	182	13.2	198	15.1	227		
RHL 37 - 200			51	12.8	10.2	131	12.8	164	14.0	180	15.3	196	19.5	250		
RHL 37 - 250			64	10.7	12.8	137	16.0	171	17.6	188	19.2	205	21.8	233		
RHL 37 - 300			76	7.5	15.2	114	19.0	143	20.9	157	22.8	171	27.9	209		
RHL 37 - 1200	1.9 x 1.5		305	2.1	61.0	128	76.3	160	83.9	176	91.5	192	127.2	267		
RHL 50 - 100	12.5	6.3	25	42.1	5.0	211	6.3	265	6.9	289	7.5	316	9.8	413		
RHL 50 - 125			32	33.2	6.4	212	8.0	266	8.8	292	9.6	319	13.6	452		
RHL 50 - 150			38	29.3	7.6	223	9.5	278	10.5	306	11.4	334	14.6	428		
RHL 50 - 175			44	24.6	8.8	216	11.0	271	12.1	298	13.2	325	18.1	445		
RHL 50 - 200			51	19.6	10.2	200	12.8	251	14.0	275	15.3	300	22.3	437		
RHL 50 - 250			64	15.0	12.8	192	16.0	240	17.6	264	19.2	288	27.3	410		
RHL 50 - 300			76	13.2	15.2	201	19.0	251	20.9	276	22.8	301	33.1	437		
RHL 50 - 350			89	11.4	17.8	203	22.3	254	24.5	279	26.7	304	38.9	443		
RHL 50 - 400			102	8.4	20.4	171	25.5	214	28.1	236	30.6	257	43.8	368		
RHL 50 - 1200	2.4 x 1.9		305	2.8	61.0	171	76.3	214	83.9	235	91.5	256	139.7	391		
RHL 62 - 100	16	8	25	75.7	5.0	379	6.3	477	6.9	520	7.5	568	8.4	636		
RHL 62 - 125			32	52.8	6.4	338	8.0	422	8.8	465	9.6	507	10.5	554		
RHL 62 - 150			38	48.5	7.6	369	9.5	461	10.5	507	11.4	553	13.6	660		
RHL 62 - 175			44	42.8	8.8	377	11.0	471	12.1	518	13.2	565	15.9	681		
RHL 62 - 200			51	37.1	10.2	378	12.8	475	14.0	520	15.3	568	18.9	701		
RHL 62 - 250			64	30.3	12.8	388	16.0	485	17.6	533	19.2	582	24.9	754		
RHL 62 - 300			76	25.7	15.2	391	19.0	488	20.9	537	22.8	586	29.2	750		
RHL 62 - 350			89	21.7	17.8	386	22.3	484	24.5	531	26.7	579	34.5	749		
RHL 62 - 400			102	19.3	20.4	394	25.5	492	28.1	541	30.6	591	39.1	755		
RHL 62 - 450			115	15.7	23.0	361	28.8	452	31.6	497	34.5	542	44.0	691		
RHL 62 - 1200			3.1 x 2.5		305	7.1	61.0	433	76.3	542	83.9	596	91.5	650	103.6	736
RHL 75 - 100	20	10	25	216	5.0	1080	6.3	1361	6.9	1485	7.5	1620	8.3	1793		
RHL 75 - 125			32	168	6.4	1075	8.0	1344	8.8	1478	9.6	1613	10.9	1831		
RHL 75 - 150			38	129	7.6	980	9.5	1226	10.5	1348	11.4	1471	12.5	1613		
RHL 75 - 175			44	112	8.8	986	11.0	1232	12.1	1355	13.2	1478	15.0	1680		
RHL 75 - 200			51	94.0	10.2	959	12.8	1203	14.0	1318	15.3	1438	17.6	1654		
RHL 75 - 250			64	72.1	12.8	923	16.0	1154	17.6	1269	19.2	1384	22.6	1629		
RHL 75 - 300			76	59.7	15.2	907	19.0	1134	20.9	1248	22.8	1361	27.5	1642		
RHL 75 - 350			89	50.5	17.8	899	22.3	1126	24.5	1236	26.7	1348	31.7	1601		
RHL 75 - 400			102	44.2	20.4	902	25.5	1127	28.1	1240	30.6	1353	37.5	1658		
RHL 75 - 450			115	38.4	23.0	883	28.8	1106	31.6	1214	34.5	1325	42.6	1636		
RHL 75 - 500			127	34.1	25.4	866	31.8	1084	34.9	1191	38.1	1299	45.5	1552		
RHL 75 - 550			139	31.0	28.0	868	35.0	1085	38.2	1185	42.0	1302	50.1	1553		
RHL 75 - 600			152	28.2	30.4	857	38.0	1072	41.8	1179	45.6	1286	55.8	1574		
RHL 75 - 1200			4.0 x 3.3		305	15.0	61.0	915	76.3	1145	83.9	1258	91.5	1373	114.1	1712

Code	D _H	D _d	L ₀	R	A	B	C	D	E					
	Hole Diameter: b x h	Rod Diameter	Free Length	Spring Constant ± 10%	20% L ₀ + 3,000,000	25% L ₀ ~ 1,500,000	27.5% L ₀ 300 - 500,000	30% L ₀ 100 - 200,000	approx. do not use					
	mm	mm	mm	N/mm	mm	mm	mm	mm	mm					
RHL 100 - 100			25	375	5.0	1875	6.3	2363	6.9	2578	7.5	2813	8.5	3188
RHL 100 - 125			32	297	6.4	1901	8.0	2376	8.8	2614	9.6	2851	11.0	3267
RHL 100 - 150			38	219	7.6	1664	9.5	2081	10.5	2289	11.4	2497	12.6	2759
RHL 100 - 175			44	187	8.8	1646	11.0	2057	12.1	2263	13.2	2468	14.8	2768
RHL 100 - 200			51	156	10.2	1591	12.8	1997	14.0	2188	15.3	2387	17.9	2792
RHL 100 - 250			64	123	12.8	1574	16.0	1968	17.6	2165	19.2	2362	23.1	2841
RHL 100 - 300			76	99.0	15.2	1505	19.0	1881	20.9	2069	22.8	2257	26.3	2604
RHL 100 - 350	25	12.5	89	84.0	17.8	1495	22.3	1873	24.5	2056	26.7	2243	30.5	2562
RHL 100 - 400			102	73.0	20.4	1489	25.5	1862	28.1	2048	30.6	2234	37.3	2723
RHL 100 - 450			115	65.0	23.0	1495	28.8	1872	31.6	2056	34.5	2243	41.9	2724
RHL 100 - 500			127	57.7	25.4	1466	31.8	1835	34.9	2015	38.1	2198	46.2	2666
RHL 100 - 550			139	52.7	28.0	1476	35.0	1845	38.2	2014	42.0	2213	49.3	2598
RHL 100 - 600			152	47.8	30.4	1453	38.0	1816	41.8	1998	45.6	2180	55.7	2662
RHL 100 - 700			178	41.0	35.6	1460	44.5	1825	49.0	2007	53.4	2189	65.1	2669
RHL 100 - 800			203	35.8	40.6	1453	50.8	1819	55.8	1999	60.9	2180	74.5	2667
RHL 100 - 1200	5.5 x 4.2		305	22.9	61.0	1397	76.3	1747	83.9	1921	91.5	2095	110.2	2524
RHL 125 - 150			38	388	7.6	2949	9.5	3686	10.5	4055	11.4	4423	12.5	4850
RHL 125 - 175			44	324	8.8	2851	11.0	3564	12.1	3920	13.2	4277	14.9	4828
RHL 125 - 200			51	272	10.2	2774	12.8	3482	14.0	3815	15.3	4162	17.8	4842
RHL 125 - 250			64	212	12.8	2714	16.0	3392	17.6	3731	19.2	4070	22.4	4749
RHL 125 - 300			76	172	15.2	2614	19.0	3268	20.9	3595	22.8	3922	26.1	4489
RHL 125 - 350			89	141	17.8	2510	22.3	3144	24.5	3451	26.7	3765	30.8	4343
RHL 125 - 400	32	16	102	122	20.4	2489	25.5	3111	28.1	3422	30.6	3733	36.8	4490
RHL 125 - 450			115	107	23.0	2461	28.8	3082	31.6	3384	34.5	3692	41.4	4430
RHL 125 - 500			127	93.0	25.4	2362	31.8	2957	34.9	3248	38.1	3543	44.4	4129
RHL 125 - 550			139	86.0	28.0	2408	35.0	3010	38.2	3287	42.0	3612	48.5	4171
RHL 125 - 600			152	78.0	30.4	2371	38.0	2964	41.8	3260	45.6	3557	54.8	4274
RHL 125 - 700			178	67.2	35.6	2392	44.5	2990	49.0	3289	53.4	3588	63.6	4274
RHL 125 - 800			203	59.1	40.6	2399	50.8	3002	55.8	3299	60.9	3599	72.5	4285
RHL 125 - 1000			254	46.4	50.8	2357	63.5	2946	69.9	3241	76.2	3536	92.8	4306
RHL 125 - 1200	7.1 x 5.4		305	38.0	61.0	2318	76.3	2899	83.9	3187	91.5	3477	111.8	4248
RHL 150 - 200			51	350	10.2	3570	12.8	4480	14.0	4909	15.3	5355	17.0	5950
RHL 150 - 250			64	269	12.8	3443	16.0	4304	17.6	4734	19.2	5165	21.9	5891
RHL 150 - 300			76	219	15.2	3329	19.0	4161	20.9	4577	22.8	4993	26.7	5847
RHL 150 - 350			89	190	17.8	3382	22.3	4237	24.5	4650	26.7	5073	31.3	5947
RHL 150 - 400	40	20	102	163	20.4	3325	25.5	4157	28.1	4572	30.6	4988	37.1	6047
RHL 150 - 450			115	142	23.0	3266	28.8	4090	31.6	4491	34.5	4899	41.0	5822
RHL 150 - 500			127	128	25.4	3251	31.8	4070	34.9	4470	38.1	4877	46.5	5952
RHL 150 - 550			139	115	28.0	3220	35.0	4025	38.2	4396	42.0	4830	53.1	6107
RHL 150 - 600			152	105	30.4	3192	38.0	3990	41.8	4389	45.6	4788	56.1	5891
RHL 150 - 700			178	89	35.6	3168	44.5	3961	49.0	4357	53.4	4753	67.4	5999
RHL 150 - 800			203	77	40.6	3126	50.8	3912	55.8	4299	60.9	4689	76.2	5867
RHL 150 - 1000			254	61	50.8	3099	63.5	3874	69.9	4261	76.2	4648	96.2	5868
RHL 150 - 1200	8.4 x 6.2		305	51	61.0	3111	76.3	3891	83.9	4278	91.5	4667	114.8	5855
RHL 200 - 250			64	413	12.8	5286	16.0	6608	17.6	7269	19.2	7930	22.4	9251
RHL 200 - 300			76	339	15.2	5153	19.0	6441	20.9	7085	22.8	7729	26.5	8984
RHL 200 - 350			89	288	17.8	5126	22.3	6422	24.5	7049	26.7	7690	31.5	9072
RHL 200 - 400			102	245	20.4	4998	25.5	6248	28.1	6872	30.6	7497	37.6	9212
RHL 200 - 450			115	215	23.0	4945	28.8	6192	31.6	6799	34.5	7418	42.7	9181
RHL 200 - 500	50	25	127	192	25.4	4877	31.8	6106	34.9	6706	38.1	7315	47.5	9120
RHL 200 - 550			139	168	28.0	4704	35.0	5880	38.2	6422	42.0	7056	51.8	8702
RHL 200 - 600			152	154	30.4	4682	38.0	5852	41.8	6437	45.6	7022	57.8	8901
RHL 200 - 700			178	134	35.6	4770	44.5	5963	49.0	6559	53.4	7156	68.5	9179
RHL 200 - 800			203	117	40.6	4750	50.8	5944	55.8	6532	60.9	7125	77.6	9079
RHL 200 - 1000			254	89	50.8	4521	63.5	5652	69.9	6217	76.2	6782	97.9	8713
RHL 200 - 1200	11.1 x 7.6		305	73	61.0	4453	76.3	5570	83.9	6123	91.5	6680	120.7	8811
RHL 250 - 300			76	618	15.2	9394	19.0	11742	20.9	12916	22.8	14090	24.7	15265
RHL 250 - 350			89	515	17.8	9167	22.3	11485	24.5	12605	26.7	13751	30.0	15450
RHL 250 - 400			102	438	20.4	8935	25.5	11169	28.1	12286	30.6	13403	35.1	15374
RHL 250 - 450			115	370	23.0	8510	28.8	10656	31.6	11701	34.5	12765	37.5	13875
RHL 250 - 500	63	38	127	333	25.4	8458	31.8	10589	34.9	11630	38.1	12687	45.9	15285
RHL 250 - 600			152	269	30.4	8178	38.0	10222	41.8	11244	45.6	12266	56.5	15199
RHL 250 - 700			178	226	35.6	8046	44.5	10057	49.0	11063	53.4	12068	66.8	15097
RHL 250 - 800			203	198	40.6	8039	50.8	10058	55.8	11053	60.9	12058	78.8	15602
RHL 250 - 1000			254	155	50.8	7874	63.5	9843	69.9	10827	76.2	11811	101.7	15763
RHL 250 - 1200	11.6 x 12.3		305	128	61.0	7808	76.3	9766	83.9	10736	91.5	11712	122.4	15667

RHL
Metric

Estimated life 100,000 cycles

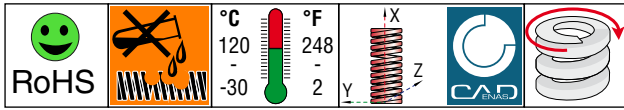
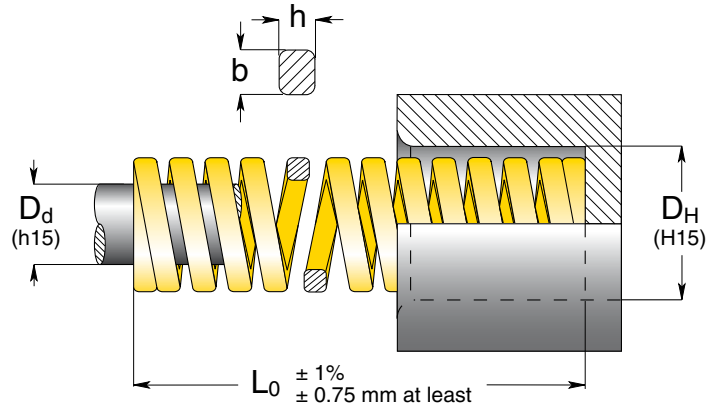
1 N = 0.1 daN = 0.102 kgf

Load (N) = R (N/mm) x Deflection (mm)

How to order: RHL 150 - 400 (Series \square D_H - \square L₀)

EN Extra-heavy load springs
Yellow color

ES Muelles carga extra-fuerte
Color amarillo



Code	D _H	D _d	L ₀	R	A	B	C	D	E	17% L ₀		20% L ₀		22.5% L ₀		25% L ₀		approx. do not use			
										mm	N	mm	N	mm	N	mm	N	mm	N		
				± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000													
					N/mm																
		b x h																			
		mm	mm																		
REL 37 - 100	10	5	25	36.8	4.3	158	5.0	184	5.6	207	6.3	232	7.7	283							
REL 37 - 125			32	27.9	5.4	151	6.4	179	7.2	201	8.0	223	10.6	296							
REL 37 - 150			38	23.7	6.5	154	7.6	180	8.6	203	9.5	225	12.6	299							
REL 37 - 175			44	19.2	7.5	144	8.8	169	9.9	190	11.0	211	13.8	265							
REL 37 - 200			51	16.5	8.7	144	10.2	168	11.5	189	12.8	211	16.2	267							
REL 37 - 250			64	13.2	10.9	144	12.8	169	14.4	190	16.0	211	20.4	269							
REL 37 - 300			76	10.9	12.9	141	15.2	166	17.1	186	19.0	207	25.2	275							
REL 37 - 1200	1.9 x 1.6		305	2.6	51.9	135	61.0	159	68.6	178	76.3	198	110.8	288							
REL 50 - 100	12.5	6.3	25	58.5	4.3	252	5.0	293	5.6	329	6.3	369	8.1	474							
REL 50 - 125			32	43.9	5.4	237	6.4	281	7.2	316	8.0	351	9.9	435							
REL 50 - 150			38	36.0	6.5	234	7.6	274	8.6	308	9.5	342	12.9	464							
REL 50 - 175			44	30.3	7.5	227	8.8	267	9.9	300	11.0	333	14.1	427							
REL 50 - 200			51	26.2	8.7	228	10.2	267	11.5	301	12.8	335	17.4	456							
REL 50 - 250			64	21.2	10.9	231	12.8	271	14.4	305	16.0	339	21.0	445							
REL 50 - 300			76	17.1	12.9	221	15.2	260	17.1	292	19.0	325	26.4	451							
REL 50 - 350			89	14.5	15.1	219	17.8	258	20.0	290	22.3	323	31.5	457							
REL 50 - 400			102	12.7	17.3	220	20.4	259	23.0	291	25.5	324	36.0	457							
REL 50 - 1200	2.6 x 2.0		305	4.3	51.9	223	61.0	262	68.6	295	76.3	328	111.3	479							
REL 62 - 100	16	8	25	118	4.3	507	5.0	590	5.6	664	6.3	743	8.5	1003							
REL 62 - 125			32	89.0	5.4	481	6.4	570	7.2	641	8.0	712	11.0	979							
REL 62 - 150			38	72.1	6.5	469	7.6	548	8.6	616	9.5	685	13.2	952							
REL 62 - 175			44	60.9	7.5	457	8.8	536	9.9	603	11.0	670	14.7	895							
REL 62 - 200			51	52.3	8.7	455	10.2	533	11.5	600	12.8	669	17.7	926							
REL 62 - 250			64	41.2	10.9	449	12.8	527	14.4	593	16.0	659	21.9	902							
REL 62 - 300			76	34.1	12.9	440	15.2	518	17.1	583	19.0	648	27.8	948							
REL 62 - 350			89	29.5	15.1	445	17.8	525	20.0	591	22.3	658	31.2	920							
REL 62 - 400			102	25.6	17.3	443	20.4	522	23.0	588	25.5	653	37.9	970							
REL 62 - 450			115	22.4	19.6	439	23.0	515	25.9	580	28.8	645	44.5	997							
REL 62 - 1200			3.2 x 2.9		305	8.4	51.9	436	61.0	512	68.6	576	76.3	641	113.5	953					
REL 75 - 100	20	10	25	293	4.3	1260	5.0	1465	5.6	1648	6.3	1846	6.9	2022							
REL 75 - 125			32	224	5.4	1210	6.4	1434	7.2	1613	8.0	1792	9.4	2106							
REL 75 - 150			38	177	6.5	1151	7.6	1345	8.6	1513	9.5	1682	12.0	2124							
REL 75 - 175			44	149	7.5	1118	8.8	1311	9.9	1475	11.0	1639	13.5	2012							
REL 75 - 200			51	128	8.7	1114	10.2	1306	11.5	1469	12.8	1638	16.2	2074							
REL 75 - 250			64	99.0	10.9	1079	12.8	1267	14.4	1426	16.0	1584	21.2	2099							
REL 75 - 300			76	81.7	12.9	1054	15.2	1242	17.1	1397	19.0	1552	24.7	2018							
REL 75 - 350			89	69.5	15.1	1049	17.8	1237	20.0	1392	22.3	1550	28.8	2002							
REL 75 - 400			102	60.6	17.3	1048	20.4	1236	23.0	1391	25.5	1545	34.8	2109							
REL 75 - 450			115	53.0	19.6	1039	23.0	1219	25.9	1371	28.8	1526	39.0	2067							
REL 75 - 500			127	47.5	21.6	1026	25.4	1207	28.6	1357	31.8	1511	43.0	2043							
REL 75 - 550			139	43.0	23.8	1023	28.0	1204	31.3	1345	35.0	1505	45.3	1948							
REL 75 - 600			152	39.0	25.8	1006	30.4	1186	34.2	1334	38.0	1482	50.4	1966							
REL 75 - 1200			4.1 x 3.8		305	21.2	51.9	1100	61.0	1293	68.6	1455	76.3	1618	103.5	2194					

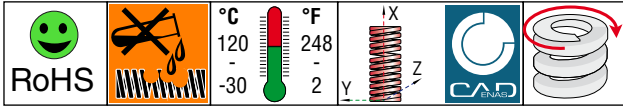
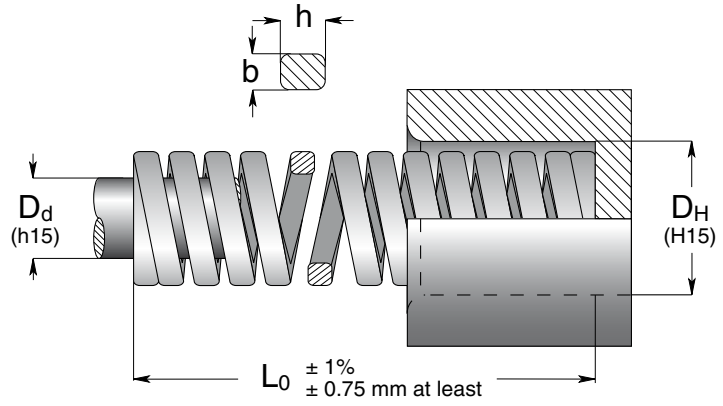


Code	D _H	D _d	L ₀	R	A	B	C	D	E						
	Hole Diameter: b x h	Rod Diameter: b x h	Free Length	Spring Constant ± 10%	17% L ₀ + 3,000,000	20% L ₀ ~ 1,500,000	22.5% L ₀ 300 - 500,000	25% L ₀ 100 - 200,000	approx. do not use						
	mm	mm	mm	N/mm	mm N	mm N	mm N	mm N	mm N						
REL 100 - 100	25	12.5	25	459.0	4.3	1974	5.0	2295	5.6	2582	6.3	2892	7.3	3351	
REL 100 - 125			32	374.4	5.4	2022	6.4	2396	7.2	2696	8.0	2995	10.7	4006	
REL 100 - 150			38	346.0	6.5	2249	7.6	2630	8.6	2958	9.5	3287	12.0	4152	
REL 100 - 175			44	244.0	7.5	1830	8.8	2147	9.9	2416	11.0	2684	14.4	3514	
REL 100 - 200			51	207.5	8.7	1805	10.2	2117	11.5	2381	12.8	2656	17.4	3611	
REL 100 - 250			64	161.0	10.9	1755	12.8	2061	14.4	2318	16.0	2576	21.4	3445	
REL 100 - 300			76	130.8	12.9	1687	15.2	1988	17.1	2237	19.0	2485	26.9	3519	
REL 100 - 350			89	110.5	15.1	1669	17.8	1967	20.0	2213	22.3	2464	30.9	3414	
REL 100 - 400			102	96.3	17.3	1666	20.4	1965	23.0	2210	25.5	2456	36.7	3534	
REL 100 - 450			115	85.7	19.6	1680	23.0	1971	25.9	2217	28.8	2468	40.3	3454	
REL 100 - 500			127	76.3	21.6	1648	25.4	1938	28.6	2180	31.8	2426	45.1	3441	
REL 100 - 550			139	68.9	23.8	1640	28.0	1929	31.3	2155	35.0	2412	47.6	3280	
REL 100 - 600	152	63.5	25.8	1638	30.4	1930	34.2	2172	38.0	2413	53.5	3397			
REL 100 - 700	178	53.9	30.3	1633	35.6	1919	40.1	2159	44.5	2399	63.9	3444			
REL 100 - 800	203	47.0	34.5	1622	40.6	1908	45.7	2147	50.8	2388	70.2	3299			
REL 100 - 1200	5.4 x 4.6	305	30.9	51.9	1604	61.0	1885	68.6	2121	76.3	2358	110.1	3402		
REL 125 - 150	32	16	38	528.2	6.5	3433	7.6	4014	8.6	4516	9.5	5018	11.4	6021	
REL 125 - 175			44	424.4	7.5	3183	8.8	3735	9.9	4202	11.0	4668	13.7	5814	
REL 125 - 200			51	353.0	8.7	3071	10.2	3601	11.5	4051	12.8	4518	15.6	5507	
REL 125 - 250			64	269.2	10.9	2934	12.8	3446	14.4	3876	16.0	4307	20.0	5384	
REL 125 - 300			76	218.5	12.9	2819	15.2	3321	17.1	3736	19.0	4152	24.4	5331	
REL 125 - 350			89	180.3	15.1	2723	17.8	3209	20.0	3611	22.3	4021	29.7	5355	
REL 125 - 400			102	155.0	17.3	2682	20.4	3162	23.0	3557	25.5	3953	35.1	5441	
REL 125 - 450			115	140.0	19.6	2744	23.0	3220	25.9	3623	28.8	4032	39.0	5460	
REL 125 - 500			127	124.0	21.6	2678	25.4	3150	28.6	3543	31.8	3943	42.8	5307	
REL 125 - 550			139	112.3	23.8	2673	28.0	3144	31.3	3512	35.0	3931	48.6	5458	
REL 125 - 600			152	102.0	25.8	2632	30.4	3101	34.2	3488	38.0	3876	52.4	5345	
REL 125 - 700			178	88.2	30.3	2672	35.6	3140	40.1	3532	44.5	3925	60.9	5371	
REL 125 - 800	203	76.0	34.5	2622	40.6	3086	45.7	3471	50.8	3861	69.2	5259			
REL 125 - 1000	254	60.8	43.2	2627	50.8	3089	57.2	3475	63.5	3861	88.1	5356			
REL 125 - 1200	7.3 x 5.9	305	49.0	51.9	2543	61.0	2989	68.6	3363	76.3	3739	104.2	5106		
REL 150 - 200	40	20	51	628	8.7	5464	10.2	6406	11.5	7206	12.8	8038	15.0	9420	
REL 150 - 250			64	487	10.9	5308	12.8	6234	14.4	7013	16.0	7792	19.5	9497	
REL 150 - 300			76	379	12.9	4889	15.2	5761	17.1	6481	19.0	7201	23.3	8831	
REL 150 - 350			89	321	15.1	4847	17.8	5714	20.0	6428	22.3	7158	26.7	8571	
REL 150 - 400			102	281	17.3	4861	20.4	5732	23.0	6449	25.5	7166	33.8	9498	
REL 150 - 450			115	245	19.6	4802	23.0	5635	25.9	6339	28.8	7056	36.2	8869	
REL 150 - 500			127	221	21.6	4774	25.4	5613	28.6	6315	31.8	7028	40.7	8995	
REL 150 - 550			139	190	23.8	4522	28.0	5320	31.3	5942	35.0	6650	44.5	8455	
REL 150 - 600			152	168	25.8	4334	30.4	5107	34.2	5746	38.0	6384	49.6	8333	
REL 150 - 700			178	146	30.3	4424	35.6	5198	40.1	5847	44.5	6497	59.9	8745	
REL 150 - 800			203	132	34.5	4554	40.6	5359	45.7	6029	50.8	6706	67.1	8857	
REL 150 - 1000			254	107	43.2	4622	50.8	5436	57.2	6115	63.5	6795	86.3	9234	
REL 150 - 1200	8.4 x 7.5	305	87.8	51.9	4557	61.0	5356	68.6	6025	76.3	6699	103.6	9096		
REL 200 - 250	50	25	64	709	10.9	7728	12.8	9075	14.4	10210	16.0	11344	19.3	13684	
REL 200 - 300			76	572	12.9	7379	15.2	8694	17.1	9781	19.0	10868	24.2	13842	
REL 200 - 350			89	475	15.1	7173	17.8	8455	20.0	9512	22.3	10593	28.0	13300	
REL 200 - 400			102	405	17.3	7007	20.4	8262	23.0	9295	25.5	10328	33.5	13568	
REL 200 - 450			115	352	19.6	6899	23.0	8096	25.9	9108	28.8	10138	38.6	13587	
REL 200 - 500			127	316	21.6	6826	25.4	8026	28.6	9030	31.8	10049	41.4	13082	
REL 200 - 550			139	274	23.8	6521	28.0	7672	31.3	8569	35.0	9590	47.3	12960	
REL 200 - 600			152	239	25.8	6166	30.4	7266	34.2	8174	38.0	9082	50.2	11998	
REL 200 - 700			178	215	30.3	6515	35.6	7654	40.1	8611	44.5	9568	61.1	13137	
REL 200 - 800			203	187	34.5	6452	40.6	7592	45.7	8541	50.8	9500	67.7	12660	
REL 200 - 1000			254	153	43.2	6610	50.8	7772	57.2	8744	63.5	9716	87.0	13311	
REL 200 - 1200			11.5 x 9.0	305	127	51.9	6591	61.0	7747	68.6	8715	76.3	9690	103.4	13132
REL 250 - 300	63	38	76	952	12.9	12280	15.2	14470	-	-	-	-	15.5	14756	
REL 250 - 350			89	819	15.1	12360	17.8	14580	-	-	-	-	-	20.0	19040
REL 250 - 400			102	700	17.3	12110	20.4	14280	23.0	16065	25.5	17850	30.7	21449	
REL 250 - 450			115	620	19.6	12152	23.0	14260	25.9	16043	28.8	17860	34.9	21640	
REL 250 - 500			127	565	21.6	12204	25.4	14351	28.6	16145	31.8	17967	38.0	21470	
REL 250 - 600			152	458	25.8	11816	30.4	13923	34.2	15664	38.0	17404	47.2	21618	
REL 250 - 700			178	384	30.3	11635	35.6	13670	40.1	15379	44.5	17088	55.8	21427	
REL 250 - 800			203	337	34.5	11627	40.6	13682	45.7	15392	50.8	17120	64.8	21838	
REL 250 - 1000			254	263	43.2	11362	50.8	13360	57.2	15030	63.5	16701	86.7	22802	
REL 250 - 1200			11.6 x 14.9	305	218	51.9	11314	61.0	13298	68.6	14960	76.3	16633	105.7	23043

REL Metric

Estimated life 100,000 cycles

- EN** Ultra-heavy load springs
Silver color
- ES** Muelles carga ultra-fuerte
Color plateado



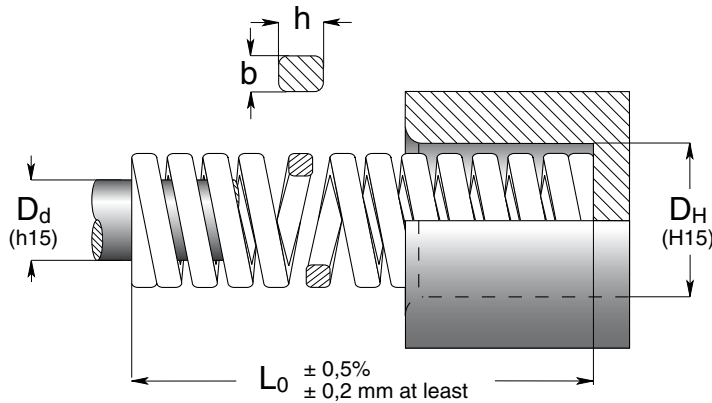
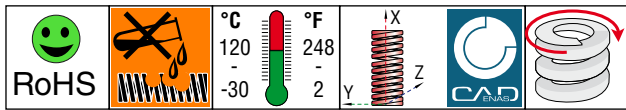
Code	D_H		D_d	L_0	R	A		B		C		D		E	
	Hole Diameter					Free Length	Spring Constant	10% L_0		12% L_0		13.5% L_0		15% L_0	
	$b \times h$				$\pm 10\%$	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000						
	mm	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N
RUL 37 - 100	10	5	25	167	2.5	418	3.0	501	3.4	564	3.8	626	5.9	985	
RUL 37 - 125			32	130	3.2	416	3.8	499	4.3	562	4.8	624	7.5	975	
RUL 37 - 150			38	105	3.8	399	4.6	479	5.1	539	5.7	599	8.2	861	
RUL 37 - 175			44	86	4.4	378	5.3	454	5.9	511	6.6	568	11.0	946	
RUL 37 - 200			51	79	5.1	403	6.1	483	6.9	544	7.7	604	12.5	988	
RUL 37 - 250			64	62	6.4	397	7.7	476	8.6	536	9.6	595	15.8	980	
RUL 37 - 300			76	51	7.6	388	9.1	465	10.3	523	11.4	581	19.0	969	
RUL 37 - 1200			2.0 x 2.8	305	11.5	30.5	351	36.6	421	41.2	474	45.8	526	89.0	1024
RUL 50 - 100	12.5	6.3	25	288	2.5	720	3.0	864	3.4	972	3.8	1080	5.6	1613	
RUL 50 - 125			32	216	3.2	691	3.8	829	4.3	933	4.8	1037	7.3	1577	
RUL 50 - 150			38	176	3.8	669	4.6	803	5.1	903	5.7	1003	9.2	1619	
RUL 50 - 175			44	149	4.4	656	5.3	787	5.9	885	6.6	983	11.1	1654	
RUL 50 - 200			51	128	5.1	653	6.1	783	6.9	881	7.7	979	12.6	1613	
RUL 50 - 250			64	100	6.4	640	7.7	768	8.6	864	9.6	960	16.1	1610	
RUL 50 - 300			76	84	7.6	638	9.1	766	10.3	862	11.4	958	19.3	1621	
RUL 50 - 350			89	71	8.9	632	10.7	758	12.0	853	13.4	948	23.3	1654	
RUL 50 - 400	102	61	10.2	622	12.2	747	13.8	840	15.3	933	26.9	1641			
RUL 50 - 1200	2.75 x 3.4	305	22	30.5	671	36.6	805	41.2	906	45.8	1007	94.0	2068		
RUL 62 - 125	16	8	32	449	3.2	1437	3.8	1724	4.3	1940	4.8	2155	6.6	2963	
RUL 62 - 150			38	363	3.8	1379	4.6	1655	5.1	1862	5.7	2069	8.1	2940	
RUL 62 - 175			44	309	4.4	1360	5.3	1632	5.9	1835	6.6	2039	10.1	3121	
RUL 62 - 200			51	256	5.1	1306	6.1	1567	6.9	1763	7.7	1958	11.3	2893	
RUL 62 - 250			64	203	6.4	1299	7.7	1559	8.6	1754	9.6	1949	14.3	2903	
RUL 62 - 300			76	166	7.6	1262	9.1	1514	10.3	1703	11.4	1892	18.0	2988	
RUL 62 - 350			89	139	8.9	1237	10.7	1485	12.0	1670	13.4	1856	20.5	2850	
RUL 62 - 400			102	114	10.2	1163	12.2	1395	13.8	1570	15.3	1744	24.3	2770	
RUL 62 - 450	115	105	11.5	1208	13.8	1449	15.5	1630	17.3	1811	27.0	2835			
RUL 62 - 500	127	94	12.7	1194	15.2	1433	17.1	1612	19.1	1791	31.5	2961			
RUL 62 - 600	152	78	15.2	1186	18.2	1423	20.5	1601	22.8	1778	38.0	2964			
RUL 62 - 1200	3.5 x 4.75	305	38.8	30.5	1183	36.6	1420	41.2	1598	45.8	1775	77.2	2995		
RUL 75 - 175	20	10	44	452	4.4	1989	5.3	2387	5.9	2685	6.6	2983	8.9	4023	
RUL 75 - 200			51	378	5.1	1928	6.1	2313	6.9	2603	7.7	2892	10.6	4007	
RUL 75 - 250			64	301	6.4	1926	7.7	2312	8.6	2601	9.6	2890	13.8	4154	
RUL 75 - 300			76	247	7.6	1877	9.1	2253	10.3	2534	11.4	2816	16.2	4001	
RUL 75 - 350			89	208	8.9	1851	10.7	2221	12.0	2499	13.4	2777	20.1	4181	
RUL 75 - 400			102	188	10.2	1918	12.2	2301	13.8	2589	15.3	2876	22.3	4192	
RUL 75 - 450			115	159	11.5	1829	13.8	2194	15.5	2468	17.3	2743	25.5	4055	
RUL 75 - 500			127	146	12.7	1854	15.2	2225	17.1	2503	19.1	2781	27.9	4073	
RUL 75 - 600	152	120	15.2	1824	18.2	2189	20.5	2462	22.8	2736	34.1	4092			
RUL 75 - 305	4.0 x 6.0	305	60	30.5	1830	36.6	2196	41.2	2471	45.8	2745	68.8	4128		

Code	D _H	D _d	L ₀	R	A	B	C	D	E						
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	10% L ₀	12% L ₀	13.5% L ₀	15% L ₀	approx. do not use						
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000							
	mm	mm	mm	N/mm	mm N	mm N	mm N	mm N	mm N						
RUL 100 - 175	25	12.5	44	1158	4.4	5095	5.3	6137	5.9	6832	6.6	7642	9.8	11348	
RUL 100 - 200			51	933	5.1	4758	6.1	5691	6.9	6437	7.7	7184	11	10263	
RUL 100 - 250			64	644	6.4	4122	7.7	4959	8.6	5564	9.6	6182	13	8372	
RUL 100 - 300			76	556	7.6	4226	9.1	5060	10.3	5705	11.4	6338	16	8896	
RUL 100 - 350			89	462	8.9	4112	10.7	4943	12.0	5551	13.4	6168	20	9240	
RUL 100 - 400			102	390	10.2	3978	12.2	4758	13.8	5370	15.3	5967	23	8970	
RUL 100 - 450			115	360	11.5	4140	13.8	4968	15.5	5589	17.3	6210	26	9360	
RUL 100 - 500			127	326	12.7	4140	15.2	4955	17.1	5589	19.1	6210	28	9128	
RUL 100 - 600			152	255	15.2	3876	18.2	4641	20.5	5233	22.8	5814	34	8670	
RUL 100 - 700			178	230	17.8	4094	21.4	4922	24.0	5527	26.7	6141	39	8970	
RUL 100 - 800			203	202	20.3	4101	24.4	4929	27.4	5536	30.5	6151	45	9090	
RUL 100 - 1200	5.6 x 7.5	305	136	30.5	4148	36.6	4978	41.2	5600	45.8	6222	63	8568		
RUL 125 - 175	32	16	44	1300	4.4	5720	5.3	6890	5.9	7670	6.6	8580	9.3	12090	
RUL 125 - 200			51	1150	5.1	5865	6.1	7015	6.9	7935	7.7	8855	10.4	11960	
RUL 125 - 250			64	1077	6.4	6892	7.7	8270	8.6	9305	9.6	10337	13	13998	
RUL 125 - 300			76	874	7.6	6642	9.1	7971	10.3	8967	11.4	9964	16	13984	
RUL 125 - 350			89	721	8.9	6419	11	7702	12.0	8663	13.3	9628	20	14424	
RUL 125 - 400			102	620	10	6324	12	7589	13.8	8537	15.3	9486	23	14260	
RUL 125 - 450			115	560	12	6440	14	7728	15.5	8694	17.2	9660	26	14560	
RUL 125 - 500			127	496	13	6299	15	7559	17.1	8504	19.0	9449	28	13888	
RUL 125 - 600			152	408	15	6202	18	7442	20.5	8372	22.8	9302	34	13872	
RUL 125 - 700			178	353	18	6280	21	7536	24.0	8483	26.7	9420	39	13759	
RUL 125 - 800			203	304	20	6171	24	7405	27.4	8331	30.4	9257	45	13680	
RUL 125 - 1000	254	243	25	6177	30	7413	34.3	8332	38.1	9266	62	15078			
RUL 125 - 1200	7.5 x 9.2	305	196	31	5978	37	7174	41.2	8070	45.7	8967	75	14700		
RUL 150 - 250	40	20	64	1128	6.4	7219	7.7	8685	8.6	9700	9.6	10828	12	13536	
RUL 150 - 300			76	1017	7.6	7729	9.1	9254	10.2	10373	11.4	11593	14.5	14746	
RUL 150 - 350			89	880	8.9	7832	10.7	9416	12.0	10573	13.4	11748	20	17600	
RUL 150 - 400			102	762	10.2	7772	12.2	9296	13.8	10493	15.3	11659	23	17526	
RUL 150 - 450			115	679	11.5	7809	13.8	9370	15.5	10541	17.3	11713	26	17654	
RUL 150 - 500			127	622	12.7	7899	15.2	9454	17.1	10664	19.1	11849	28	17416	
RUL 150 - 600			152	509	15.2	7737	18.2	9264	20.5	10445	22.8	11605	36	18324	
RUL 150 - 700			178	429	17.8	7636	21.4	9181	24.0	10309	26.7	11454	43	18447	
RUL 150 - 800			203	374	20.3	7592	24.4	9126	27.4	10249	30.5	11388	49	18326	
RUL 150 - 1000			254	296	25.4	7518	30.5	9028	34.3	10150	38.1	11278	62	18352	
RUL 150 - 1200			8.5 x 11.0	305	246	30.5	7530	36.6	9004	41.2	10129	45.8	11255	75	18450
RUL 200 - 250	50	25	64	1980	6.4	12672	7.7	15246	8.6	17028	9.6	19008	13.4	26532	
RUL 200 - 300			76	1811	7.6	13763	9.1	16480	10.2	18472	11.4	20645	16.3	29519	
RUL 200 - 350			89	1410	8.9	12549	10.7	15087	12.0	16941	13.4	18824	19	26790	
RUL 200 - 400			102	1215	10.2	12393	12.2	14823	13.8	16731	15.3	18590	22	26730	
RUL 200 - 450			115	1076	11.5	12374	13.8	14849	15.5	16705	17.3	18561	25	26900	
RUL 200 - 500			127	968	12.7	12294	15.2	14714	17.1	16596	19.1	18440	28	27104	
RUL 200 - 600			152	806	15.2	12251	18.2	14669	20.5	16539	22.8	18377	34	27404	
RUL 200 - 700			178	698	17.8	12424	21.4	14937	24.0	16773	26.7	18637	40	27920	
RUL 200 - 800			203	612	20.3	12424	24.4	14933	27.4	16772	30.5	18635	45	27540	
RUL 200 - 1000			254	472	25.4	11989	30.5	14396	34.3	16185	38.1	17983	58	27376	
RUL 200 - 1200			11.8 x 13.5	305	388	30.5	11834	36.6	14201	41.2	15976	45.8	17751	70	27160
RUL 250 - 300	63	38	76	1900	7.6	14440	9.1	17328	10.3	19494	11.4	21660	13	24700	
RUL 250 - 350			89	1517	8.9	13501	10.7	16202	12.0	18227	13.4	20252	20	30340	
RUL 250 - 400			102	1295	10.2	13209	12.2	15851	13.8	17832	15.3	19814	23	29785	
RUL 250 - 450			115	1070	11.5	12305	13.8	14766	15.5	16612	17.3	18458	27	28890	
RUL 250 - 500			127	979	12.7	12433	15.2	14920	17.2	16785	19.1	18650	30	29370	
RUL 250 - 600			152	775	15.2	11780	18.2	14136	20.5	15903	22.8	17670	35	27125	
RUL 250 - 700			178	630	17.8	11214	21.4	13457	24.0	15139	26.7	16821	44	27720	
RUL 250 - 800			203	546	20.3	11084	24.4	13301	27.4	14963	30.5	16626	48	26208	
RUL 250 - 1000			254	423	25.4	10744	30.5	12893	34.3	14505	38.1	16116	62	26226	
RUL 250 - 1200			11.8 x 17.8	305	349	30.5	10645	36.6	12773	41.2	14370	45.8	15967	77	26873

RUL
Metric

EN Hyper-strong
White color

ES Hyper-fuerte
color blanco



Code	D _H		L ₀	R	F _{max}	F _{max}	approx.	
	Hole Diameter	Rod Diameter					do not use	N
b x h		mm	mm	N/mm	mm	N	mm	N
RWL 62 - 079	16							
RWL 62 - 138		35	1000	4.0	5.5	5500		
RWL 62 - 197		50	615	6.5	8.0	4920		
RWL 62 - 295		75	400	10.0	12.5	5000		
RWL 62 - 394	4.6 x 5.0		100	286	14.0		16.3	4662
RWL 75 - 098	19	8	25	2400	2.5	6000	3.4	8160
RWL 75 - 157			40	1333	4.5		5.9	7865
RWL 75 - 197			50	1000	6.0		7.8	7800
RWL 75 - 295			75	600	10.0		12.4	7440
RWL 75 - 394			5.1 x 6.5		100		429	14.0
RWL 100 - 118	25	10	30	4800	2.5	12000	3.0	14400
RWL 100 - 197			50	2400	5.0		5.9	14160
RWL 100 - 295			75	1500	8.0		9.5	14250
RWL 100 - 394			100	1000	12.0		14.7	14700
RWL 100 - 492			6.9 x 9.1		125		857	14.0
RWL 125 - 138	32	12.5	35	6667	3.0	20000	3.7	24668
RWL 125 - 197			50	3636	5.5		6.3	22907
RWL 125 - 295			75	2222	9.0		11.3	25109
RWL 125 - 394			100	1538	13.0		14.9	22916
RWL 125 - 492			125	1250	16.0		18.3	22875
RWL 125 - 591			9.25 x 10.8		150		1053	19.0
RWL 150 - 157	38	16	40	7143	3.5	25000	4.5	32144
RWL 150 - 197			50	5000	5.0		5.9	29500
RWL 150 - 295			75	2778	9.0		10.4	28891
RWL 150 - 394			100	1923	13.0		15.0	28845
RWL 150 - 591			150	1316	19.0		22.4	29478
RWL 150 - 787			10.5 x 12.6		200		926	27.0

EN Features that are unparalleled on the market thanks to the superior Special Springs production technology.

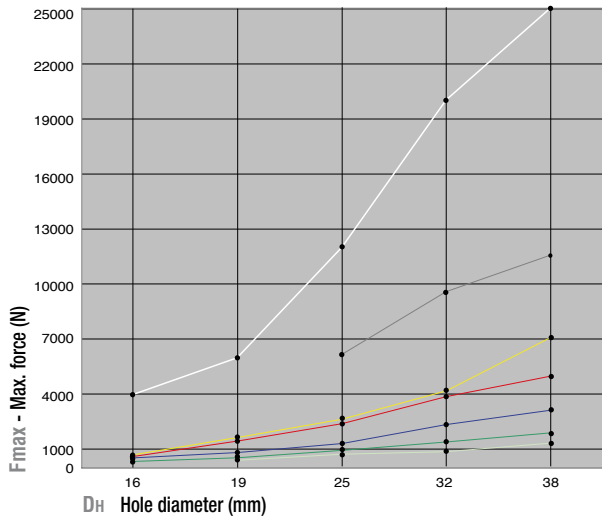
MAXIMUM FORCE UP TO 6 TIMES THE EXTRA STRONG SPRINGS (ISO standard yellow color).

MAXIMUM FORCE OVER 2 TIMES THE ULTRA STRONG SPRINGS (Special Springs standard silver color).

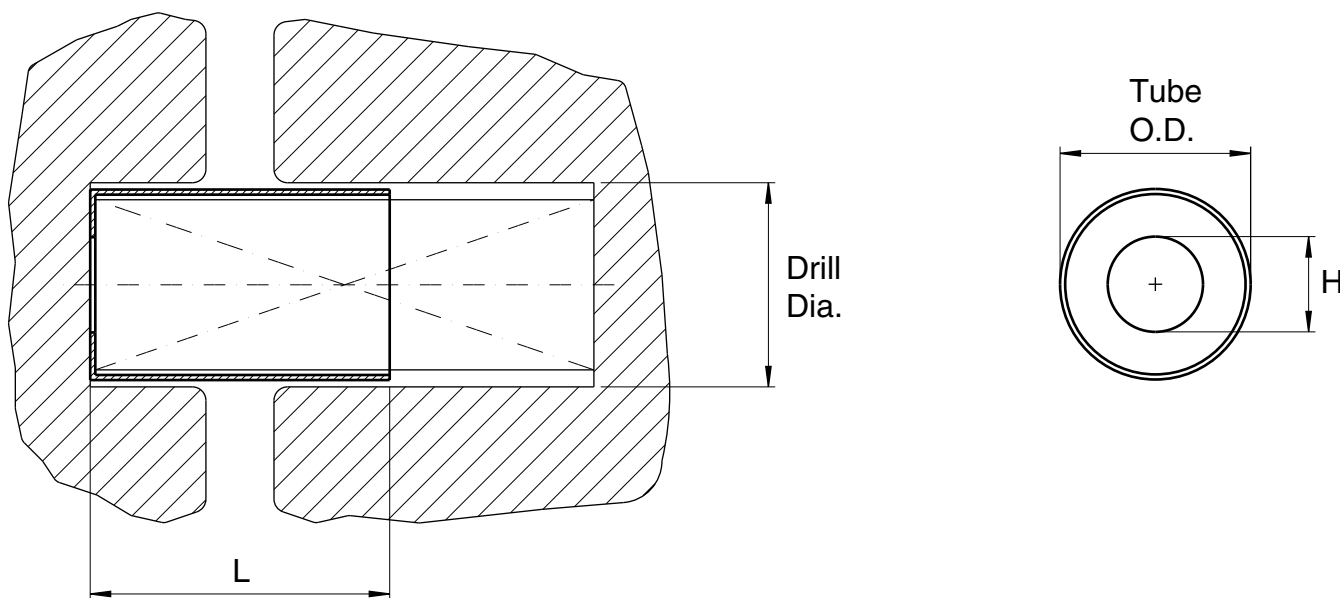
Ideal for applications that involve extremely large loads with short working strokes and that have to go for as long as possible without maintenance, in difficult environments with large amounts of contaminants and high temperatures.

ES Características únicas en el mercado, gracias a la superior tecnología de producción de Special Springs: MÁXIMA CARGA HASTA 6 VECES LA SERIE EXTRA-FUERTE (ISO standard color amarillo) MÁXIMA CARGA MÁS DE 2 VECES LA SERIE ULTRA-FUERTE (Special Springs standard color plata)

Ideales para aplicaciones que requieren cargas muy altas con recorridos de trabajo cortos, allí donde se necesite la máxima duración sin mantenimiento, en ambientes difíciles con intensa presencia de contaminantes y altas temperaturas.



	SERIES	STANDARD	LOAD
●	RSL	Special Springs	Extra-light
●	RLL	ISO 10243	Light
●	RML	ISO 10243	Medium
●	RHL	ISO 10243	Strong
●	REL	ISO 10243	Extra-Strong
●	RUL	Special Springs	Ultra-Strong
●	W	Special Springs	Hyper-strong



Springs O.D.	Drill Dia.	Tube O.D.	H
mm	mm	mm	mm
20	24	21.7	11
25	30	28.0	14
32	36	34.4	19
40	43	40.8	25
50	56	53.4	35

Material: cold-rolled steel

How to order:

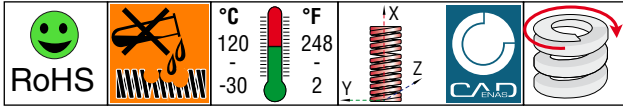
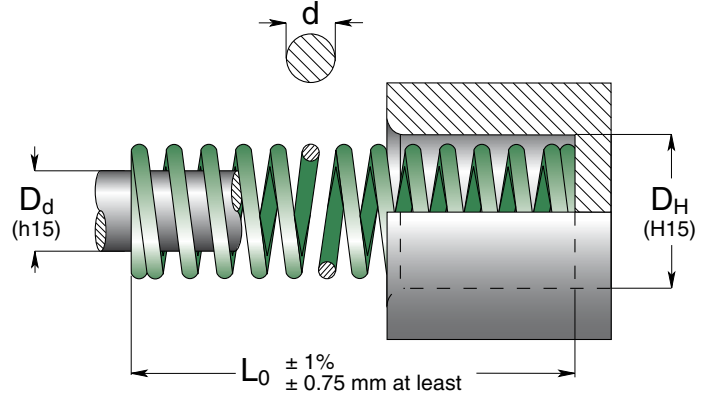
example: SSC100-40 (O.A.L. - O.D.)

CATALOG NUMBERS

O. A. L. L	O.D 20	O.D 25	O.D 32	O.D 40	O.D 50
	mm	mm	mm	mm	mm
SSC100	20	25	32	40	50
SSC125	20	25	32	40	50
SSC150	20	25	32	40	50
SSC175	20	25	32	40	50
SSC200	20	25	32	40	50
SSC225	20	25	32	40	50
SSC250	20	25	32	40	50
SSC275	20	25	32	40	50
SSC300	20	25	32	40	50
SSC325	20	25	32	40	50
SSC350	20	25	32	40	50
SSC375	20	25	32	40	50
SSC400	20	25	32	40	50
SSC425	20	25	32	40	50
SSC450	20	25	32	40	50
SSC475	20	25	32	40	50
SSC500	20	25	32	40	50
SSC550	20	25	32	40	50
SSC600	20	25	32	40	50
SSC650	20	25	32	40	50
SSC700	20	25	32	40	50
SSC800	20	25	32	40	50
SSC900	20	25	32	40	50
SSC1000	20	25	32	40	50
SSC1100	20	25	32	40	50
SSC1200	20	25	32	40	50

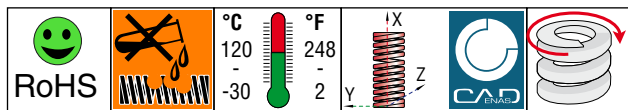
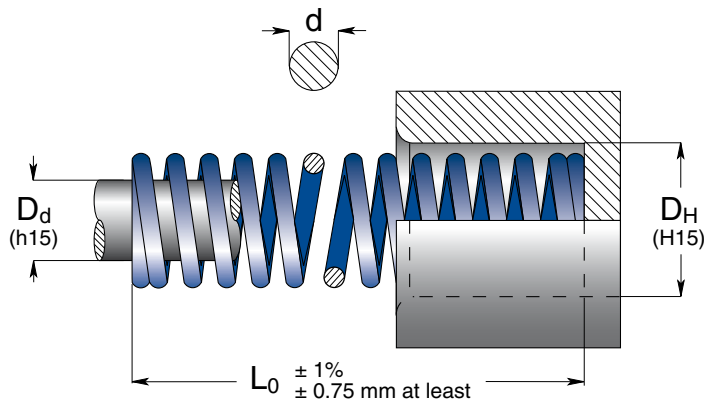
EN Light load springs
Green color

ES Muelles carga ligera
Color verde



Code	D _H Hole Diameter	D _d Rod Diameter	L ₀ Free Length	R Spring Constant	A 25% L ₀		B 30% L ₀		C 35% L ₀		D 40% L ₀		E approx. do not use	
					mm	N	mm	N	mm	N	mm	N	mm	N
				± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000						
					mm	N	mm	N	mm	N	mm	N	mm	N
CG 37 - 100	10	5	25	4.4	6.3	28	7.5	33	8.8	39	10.0	44	13.2	58
CG 37 - 125			32	3.4	8.0	27	9.6	33	11.2	38	12.8	44	16.5	58
CG 37 - 150			38	2.8	9.5	26	11.4	32	13.3	37	15.2	42	19.8	53
CG 37 - 175			44	2.4	11.0	26	13.2	31	15.4	37	17.6	42	23.1	53
CG 37 - 200			51	2.1	12.8	27	15.3	32	17.9	37	20.4	43	26.9	58
CG 37 - 250			64	1.6	16.0	26	19.2	31	22.4	36	25.6	42	33.3	53
CG 37 - 300			76	1.3	19.0	25	22.8	30	26.6	35	30.4	40	39.6	53
CG 37 - 1200	1.1		305	0.3	76.3	24	91.5	29	106.8	32	122.0	38	157.2	49
CG 50 - 100	12.5	6.3	25	8.5	6.3	53	7.5	64	8.8	74	10.0	85	13.5	116
CG 50 - 125			32	6.5	8.0	52	9.6	62	11.2	73	12.8	83	16.8	111
CG 50 - 150			38	5.3	9.5	51	11.4	61	13.3	70	15.2	81	20.3	107
CG 50 - 175			44	4.4	11.0	49	13.2	59	15.4	68	17.6	78	23.9	107
CG 50 - 200			51	3.8	12.8	48	15.3	58	17.9	68	20.4	78	26.9	102
CG 50 - 250			64	2.9	16.0	47	19.2	56	22.4	65	25.6	75	33.3	98
CG 50 - 300			76	2.5	19.0	48	22.8	57	26.6	67	30.4	76	41.1	102
CG 50 - 350	89	2.1	22.3	48	26.7	57	31.2	65	35.6	76	48.3	102		
CG 50 - 1200	1.5		305	0.6	76.3	45	91.5	54	106.8	64	122.0	73	162.8	93
CG 62 - 100	16	8	25	17.9	6.3	112	7.5	134	8.8	157	10.0	179	14.7	262
CG 62 - 125			32	13.5	8.0	108	9.6	129	11.2	151	12.8	173	18.5	249
CG 62 - 150			38	10.5	9.5	100	11.4	120	13.3	140	15.2	160	22.4	236
CG 62 - 175			44	8.8	11.0	96	13.2	116	15.4	136	17.6	154	25.9	227
CG 62 - 200			51	7.6	12.8	97	15.3	116	17.9	136	20.4	155	30.0	227
CG 62 - 250			64	5.9	16.0	95	19.2	114	22.4	132	25.6	152	37.8	222
CG 62 - 300			76	4.8	19.0	91	22.8	109	26.6	128	30.4	145	45.2	218
CG 62 - 350	89	4.0	22.3	90	26.7	108	31.2	125	35.6	144	52.8	214		
CG 62 - 400	102	3.5	25.5	90	30.6	108	35.7	125	40.8	144	60.7	214		
CG 62 - 1200	2		305	1.1	76.3	85	91.5	103	106.8	117	122.0	137	183.9	205

- EN** Medium load springs
Blue color
- ES** Muelles carga mediana
Color azul marino

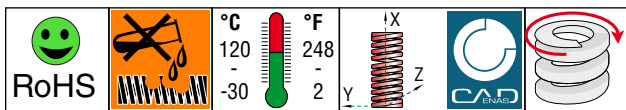
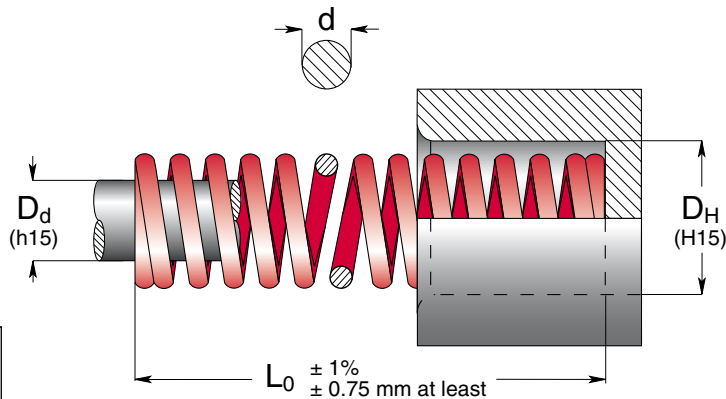


Code	D _H Hole Diameter	D _d Rod Diameter	L ₀ Free Length	R Spring Constant	A 25% L ₀		B 30% L ₀		C 33.75% L ₀		D 37.5% L ₀		E approx. do not use	
					mm	N	mm	N	mm	N	mm	N	mm	N
	d			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000						
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N
CB 37 - 100	10	5	25	12.3	6.3	77	7.5	92	8.4	104	9.4	115	10.4	129
CB 37 - 125			32	9.5	8.0	76	9.6	91	10.8	103	12.0	113	13.2	129
CB 37 - 150			38	7.8	9.5	74	11.4	88	12.8	100	14.3	111	16.0	125
CB 37 - 175			44	6.5	11.0	72	13.2	86	14.9	97	16.5	108	18.5	120
CB 37 - 200			51	5.6	12.8	72	15.3	86	17.2	96	19.1	108	21.1	120
CB 37 - 250			64	4.5	16.0	71	19.2	86	21.6	97	24.0	107	26.4	120
CB 37 - 300			76	3.7	19.0	70	22.8	84	25.7	95	28.5	105	31.8	116
CB 37 - 1200			1.5	305	0.9	76.3	68	91.5	82	102.9	93	114.4	102	128.5
CB 50 - 100	12.5	6.3	25	21.7	6.3	136	7.5	163	8.4	183	9.4	204	11.2	240
CB 50 - 125			32	16.8	8.0	134	9.6	161	10.8	181	12.0	202	14.0	236
CB 50 - 150			38	13.8	9.5	131	11.4	158	12.8	177	14.3	197	17.3	240
CB 50 - 175			44	11.6	11.0	127	13.2	153	14.9	172	16.5	191	19.8	227
CB 50 - 200			51	10.0	12.8	127	15.3	153	17.2	172	19.1	191	22.9	231
CB 50 - 250			64	7.8	16.0	125	19.2	150	21.6	168	24.0	187	28.4	222
CB 50 - 300			76	6.4	19.0	122	22.8	146	25.7	164	28.5	183	34.3	218
CB 50 - 350			89	5.6	22.3	125	26.7	150	30.0	168	33.4	188	41.4	231
CB 50 - 1200	1.8	305	1.5	76.3	118	91.5	141	102.9	154	114.4	176	139.4	214	
CB 62 - 100	16	8	25	31.9	6.3	199	7.5	239	8.4	269	9.4	299	10.9	347
CB 62 - 125			32	24.0	8.0	192	9.6	230	10.8	259	12.0	288	13.7	329
CB 62 - 150			38	19.4	9.5	185	11.4	222	12.8	249	14.3	277	16.5	320
CB 62 - 175			44	16.1	11.0	177	13.2	213	14.9	239	16.5	266	19.3	311
CB 62 - 200			51	13.8	12.8	176	15.3	212	17.2	238	19.1	265	22.1	307
CB 62 - 250			64	10.7	16.0	171	19.2	205	21.6	231	24.0	256	27.4	294
CB 62 - 300			76	8.8	19.0	166	22.8	200	25.7	226	28.5	250	33.0	289
CB 62 - 350			89	7.5	22.3	167	26.7	200	30.0	225	33.4	250	38.6	289
CB 62 - 400	102	6.5	25.5	167	30.6	200	34.4	224	38.3	250	44.5	289		
CB 62 - 1200	2.2	305	2.1	76.3	159	91.5	191	102.9	216	114.4	238	133.6	280	

Round wire Metric

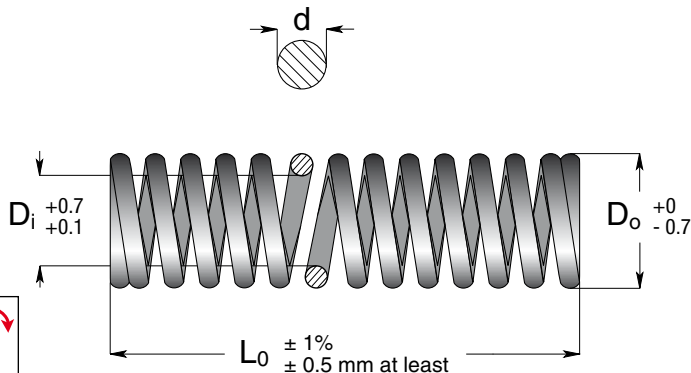
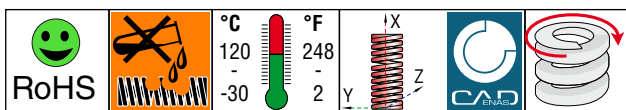
EN Heavy load springs
Red color

ES Muelles carga fuerte
Color rojo



Code	D_H		L_0	R	A		B		C		D		E	
	Hole Diameter	Rod Diameter			Free Length	Spring Constant	20% L_0	25% L_0	27.5% L_0	30% L_0	approx. do not use			
	d			$\pm 10\%$	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000			do not use			
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N
CR 37 - 100	10	5	25	20.7	5.0	103	6.3	129	6.9	142	7.5	155	8.6	178
CR 37 - 125			32	16.1	6.4	103	8.0	129	8.8	142	9.6	155	10.9	178
CR 37 - 150			38	13.0	7.6	98	9.5	123	10.5	136	11.4	148	13.2	169
CR 37 - 175			44	10.9	8.8	96	11.0	119	12.1	132	13.2	143	14.7	160
CR 37 - 200			51	9.6	10.2	98	12.8	123	14.0	135	15.3	147	17.8	169
CR 37 - 250			64	7.7	12.8	98	16.0	123	17.6	136	19.2	147	22.9	173
CR 37 - 300			76	6.3	15.2	96	19.0	119	20.9	132	22.8	143	26.9	169
CR 37 - 1200			1.6		305	1.5	61.0	93	76.3	116	83.9	126	91.5	139
CR 50 - 100	12.5	6.3	25	37.5	5.0	187	6.3	234	6.9	258	7.5	281	8.9	334
CR 50 - 125			32	28.9	6.4	185	8.0	231	8.8	254	9.6	277	11.2	325
CR 50 - 150			38	23.5	7.6	178	9.5	223	10.5	246	11.4	268	13.7	320
CR 50 - 175			44	19.6	8.8	173	11.0	216	12.1	237	13.2	259	15.7	311
CR 50 - 200			51	17.3	10.2	177	12.8	221	14.0	243	15.3	265	18.8	325
CR 50 - 250			64	13.5	12.8	173	16.0	216	17.6	238	19.2	259	23.6	320
CR 50 - 300			76	11.2	15.2	170	19.0	213	20.9	234	22.8	256	28.4	316
CR 50 - 350			89	9.5	17.8	168	22.3	210	24.5	233	26.7	252	33.0	316
CR 50 - 1200	2.2		305	2.7	61.0	162	76.3	203	83.9	226	91.5	244	114.0	302
CR 62 - 100	16	8	25	81.6	5.0	408	6.3	510	6.9	561	7.5	612	9.1	747
CR 62 - 125			32	61.3	6.4	392	8.0	490	8.8	539	9.6	588	11.4	707
CR 62 - 150			38	49.9	7.6	379	9.5	474	10.5	521	11.4	569	14.2	712
CR 62 - 175			44	40.8	8.8	359	11.0	449	12.1	494	13.2	539	16.3	663
CR 62 - 200			51	35.6	10.2	363	12.8	453	14.0	499	15.3	544	18.8	672
CR 62 - 250			64	27.8	12.8	356	16.0	446	17.6	489	19.2	535	23.9	663
CR 62 - 300			76	22.8	15.2	346	19.0	433	20.9	477	22.8	519	29.0	663
CR 62 - 350			89	19.6	17.8	349	22.3	436	24.5	480	26.7	524	34.3	672
CR 62 - 400	102	17.0	20.4	347	25.5	433	28.1	477	30.6	520	39.4	667		
CR 62 - 1200	2.8		305	5.4	61.0	330	76.3	413	83.9	453	91.5	495	118.9	645

EN Non painted with added rust preventative coating
ES Muelles no pintados con lubricación antióxido



Do spring outside diameter.
 diámetro externo del muelle.

Di spring inside diameter.
 diámetro interior del muelle.

d wire diameter.
 diámetro del hilo.

L₀ spring free length.
 longitud libre del muelle.

R spring rate (load required for 1mm deflection).
 carga (N) necesaria para desviar el muelle de 1 milímetro.

A advised working deflection for long spring life.
 deflexión aconsejada para una larga duración del muelle.

B advised working deflection for medium spring life.
 deflexión aconsejada para una media duración del muelle.

C maximum operating deflection.
 deflexión máxima permitida.

 Round
 wire
 Metric

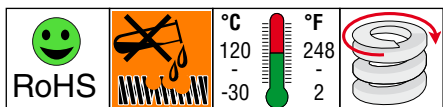
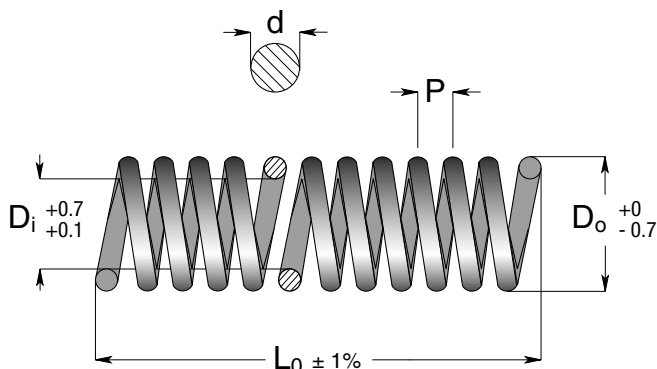
Code	D _o D _i		L ₀	R	A		B		C		D	
	Outside Diameter	Inside Diameter			Free Length	Spring Constant	16% L ₀	24% L ₀	28% L ₀	32% L ₀		
	d			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000				
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N
L 125 - 37			10	2.94	1.6		2.4		2.8		3.2	
L 125 - 56	3	2	15	1.96	2.4	4.4	3.6	6.62	4.2	6.9	4.8	8.8
L 125 - 75			20	0.98	3.2		4.8		5.6		6.4	
L 125 - 100		0.4	25	0.98	4.0		6.0		7.0		8.0	
L 156 - 37			10	4.9	1.6		2.4		2.8		3.2	
L 156 - 56			15	2.94	2.4		3.6		4.2		4.8	
L 156 - 75	4	2.6	20	2.94	3.2	7.8	4.8	11.6	5.6	14.5	6.4	15.7
L 156 - 100			25	1.96	4.0		6.0		7.0		8.0	
L 156 - 118		0.6	30	1.96	4.8		7.2		8.4		9.6	
L 234 - 56			15	7.85	2.4		3.6		4.2		4.8	
L 234 - 75			20	5.88	3.2		4.8		5.6		6.4	
L 234 - 100	6	4	25	4.90	4.0	17.7	6.0	26.5	7.0	32.4	8.0	35.5
L 234 - 118			30	3.92	4.8		7.2		8.4		9.6	
L 234 - 137		0.9	35	2.94	5.6		8.4		9.8		11.2	
L 343 - 56			15	12.75	2.4		3.6		4.2		4.8	
L 343 - 75			20	9.81	3.2		4.8		5.6		6.4	
L 343 - 100	8	5.4	25	7.85	4.0	31.4	6.0	47.1	7.0	55.6	8.0	62.8
L 343 - 118			30	6.86	4.8		7.2		8.4		9.6	
L 343 - 137			35	5.88	5.6		8.4		9.8		11.2	
L 343 - 162		1.2	40	4.90	6.4		9.6		11.2		12.8	
L 375 - 100			25	12.75	4.0		6.0		7.0		8.0	
L 375 - 118			30	9.81	4.8		7.2		8.4		9.6	
L 375 - 137	10	6.5	35	8.83	5.6	49.0	8.4	73.6	9.8	85.8	11.2	98
L 375 - 162			40	7.85	6.4		9.6		11.2		12.8	
L 375 - 175			45	6.86	7.2		10.8		12.6		14.4	
L 375 - 200		1.5	50	5.88	8.0		12.0		14.0		16.0	
L 468 - 100			25	17.65	4.0		6.0		7.0		8.0	
L 468 - 118			30	14.71	4.8		7.2		8.4		9.6	
L 468 - 137			35	12.75	5.6		8.4		9.8		11.2	
L 468 - 162	12	8	40	10.79	6.4	70.6	9.6	105.9	11.2	124.1	12.8	141.2
L 468 - 175			45	9.81	7.2		10.8		12.6		14.4	
L 468 - 200			50	8.83	8.0		12.0		14.0		16.0	
L 468 - 212			55	7.85	8.8		13.2		15.4		17.6	
L 468 - 237		1.8	60	7.85	9.6		14.4		16.8		19.2	

Code	D _o	D _i	L ₀	R	A 16% L ₀ ± 10% + 3,000,000	B 24% L ₀ ~ 1,500,000	C 28% L ₀ 300 - 500,000	D 32% L ₀ 100 - 200,000			
	Outside Diameter	Inside Diameter	Free Length	Spring Constant					mm	N	mm
L 562 - 100	14	9.3	25	24.52	4.0	96.1	144.2	167.7	192.2		
L 562 - 118			30	19.61	4.8						
L 562 - 137			35	17.65	5.6						
L 562 - 157			40	14.71	6.4						
L 562 - 175			45	13.73	7.2						
L 562 - 200			50	11.77	8.0						
L 562 - 212			55	10.79	8.8						
L 562 - 237			60	9.81	9.6						
L 562 - 256			65	8.83	10.4						
L 562 - 275			70	8.83	11.2						
	2.2										
L 625 - 100	16	10.7	25	31.38	4.0	125.5	188.3	219.8	251.1		
L 625 - 118			30	26.48	4.8						
L 625 - 137			35	22.56	5.6						
L 625 - 157			40	19.61	6.4						
L 625 - 175			45	17.65	7.2						
L 625 - 200			50	15.69	8.0						
L 625 - 216			55	14.71	8.8						
L 625 - 237			60	12.75	9.6						
L 625 - 256			65	11.77	10.4						
L 625 - 275			70	10.79	11.2						
	2.4										
L 687 - 100	18	12	25	40.21	4.0	158.9	238.3	280.4	317.7		
L 687 - 118			30	33.34	4.8						
L 687 - 137			35	28.44	5.6						
L 687 - 157			40	24.52	6.4						
L 687 - 175			45	22.56	7.2						
L 687 - 200			50	19.61	8.0						
L 687 - 216			55	17.65	8.8						
L 687 - 237			60	16.67	9.6						
L 687 - 256			65	15.69	10.4						
L 687 - 275			70	14.71	11.2						
	2.8										
L 750 - 100	20	13.5	25	49.03	4.0	196.1	294.2	346.3	392.3		
L 750 - 118			30	41.19	4.8						
L 750 - 137			35	35.30	5.6						
L 750 - 157			40	30.40	6.4						
L 750 - 175			45	27.46	7.2						
L 750 - 200			50	24.52	8.0						
L 750 - 216			55	22.56	8.8						
L 750 - 237			60	20.59	9.6						
L 750 - 256			65	18.63	10.4						
L 750 - 275			70	17.65	11.2						
	3										
L 875 - 100	22	14.7	25	59.82	4.0	237.3	356	415.9	474.6		
L 875 - 118			30	49.03	4.8						
L 875 - 137			35	42.17	5.6						
L 875 - 157			40	37.27	6.4						
L 875 - 175			45	33.34	7.2						
L 875 - 200			50	29.42	8.0						
L 875 - 216			55	27.46	8.8						
L 875 - 237			60	24.52	9.6						
L 875 - 256			65	22.56	10.4						
L 875 - 275			70	21.57	11.2						
	3.4										
L 875 - 293			75	19.61	12.0						
L 875 - 316			80	18.63	12.8						
L 875 - 350			90	16.67	14.4						
L 875 - 400			100	14.71	16.0						

Code	D _o D _i		L ₀	R	A	B	C	D	
	Outside Diameter	Inside Diameter							
	d			Spring Constant	16% L ₀	24% L ₀	28% L ₀	32% L ₀	
	mm	mm	mm	N/mm	mm	mm	mm	mm	
L 1000 - 100	25	17	25	76.49	4.0	6.0	7.0	8.0	
L 1000 - 118			30	63.74	4.8	7.2	8.4	9.6	
L 1000 - 137			35	54.92	5.6	8.4	9.8	11.2	
L 1000 - 157			40	48.05	6.4	9.6	11.2	12.8	
L 1000 - 175			45	42.17	7.2	10.8	12.6	14.4	
L 1000 - 200			50	38.25	8.0	12.0	14.0	16.0	
L 1000 - 216			55	35.30	8.8	13.2	15.4	17.6	
L 1000 - 237			60	32.36	9.6	14.4	16.8	19.2	
L 1000 - 256			65	29.42	10.4	15.6	18.2	20.8	
L 1000 - 275			70	27.46	11.2	16.8	19.6	22.4	
L 1000 - 293			75	25.50	12.0	18.0	21.0	24.0	
L 1000 - 316			80	23.54	12.8	19.2	22.4	25.6	
L 1000 - 350			90	21.57	14.4	21.6	25.2	28.8	
L 1000 - 400			3.8	100	19.61	16.0	24.0	28.0	32.0
L 1187 - 200			30	20	50	51.94	8.0	12.0	14.0
L 1187 - 237	60	44.10			9.6	14.4	16.8	19.2	
L 1187 - 275	70	37.24			11.2	16.8	19.6	22.4	
L 1187 - 316	80	32.34			12.8	19.2	22.4	25.6	
L 1187 - 350	90	28.42			14.4	21.6	25.2	28.8	
L 1187 - 400	100	25.48			16.0	24.0	28.0	32.0	
L 1187 - 489	4.5	125	20.58	20.0	30.0	35.0	40.0		

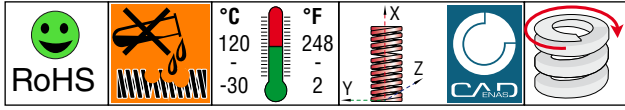
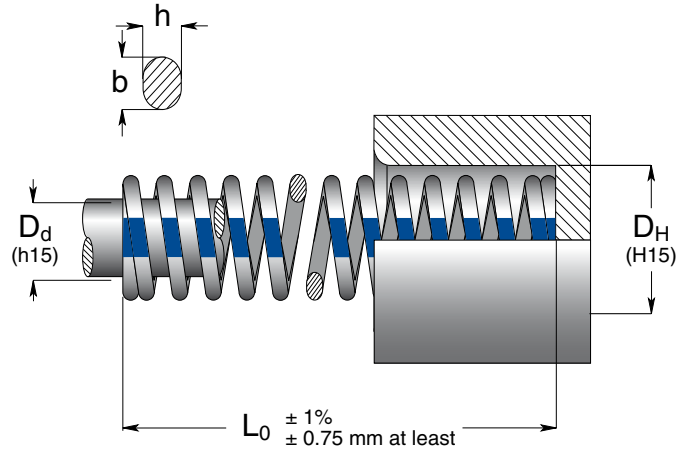
Round wire Metric

EN Long size open ends
ES Piezas desmochadas con terminales abiertos



Code	D _o	D _i	d	L ₀	P
	Outside Diameter	Inside Diameter	Wire Diameter	Free Length	Pitch
	mm	mm	mm	mm	mm
L 125 - 1200	3	2.0	0.4	300	1.04
L 156 - 1200	4	2.6	0.6	300	1.50
L 234 - 1200	6	4.0	0.9	300	2.00
L 343 - 1200	8	5.4	1.2	300	2.80
L 375 - 1200	10	6.5	1.5	300	3.50
L 468 - 1200	12	8.0	1.8	300	4.30
L 562 - 1200	14	9.3	2.2	300	4.80
L 625 - 1200	16	10.7	2.4	300	5.50
L 687 - 1200	18	12.0	2.8	300	5.30
L 750 - 1200	20	13.5	3.0	300	6.80
L 875 - 1200	22	14.7	3.4	300	6.70
L 1000 - 1200	25	17.0	3.8	300	8.20

- EN** Light load springs
Silver-blue color
- ES** Muelles carga ligera
Color plateado-azul



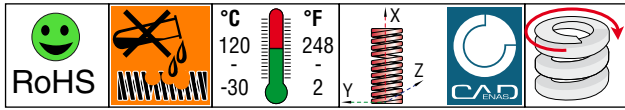
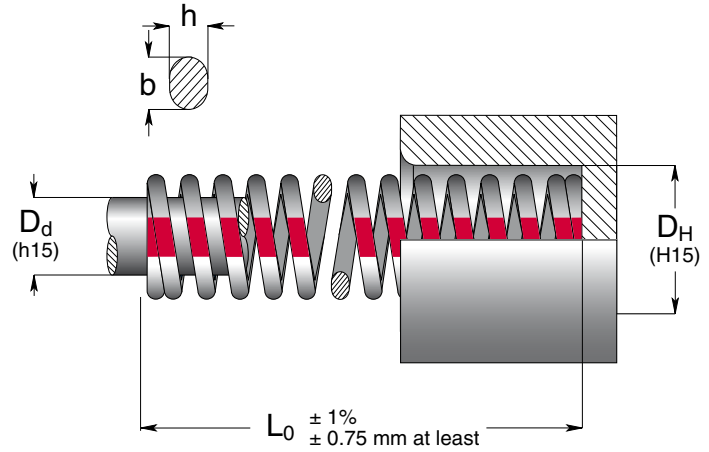
Code	D _H	D _d	L ₀	R	A		B		C		D		E	
					25% L ₀	40% L ₀	45% L ₀	50% L ₀	approx. do not use					
b x h			Free Length	Spring Constant	+ 3,000,000		~ 1,500,000		300 - 500,000		100 - 200,000		do not use	
mm	mm	mm			N/mm	mm	N	mm	N	mm	N	mm	N	mm
OLS 37 - 100	9.5	4.7	25	14.4	6.3	91	10.0	144	11.3	162	12.5	180	13.5	194
OLS 37 - 125			32	12.3	8.0	98	12.8	157	14.4	177	16.0	197	17.5	215
OLS 37 - 150			38	9.8	9.5	93	15.2	149	17.1	168	19.0	186	20.8	204
OLS 37 - 175			44	8.8	11.0	97	17.6	155	19.8	174	22.0	194	23.9	210
OLS 37 - 200			51	7.5	12.8	96	20.4	153	23.0	172	25.5	191	28.9	217
OLS 37 - 250			64	4.9	16.0	78	25.6	125	28.8	141	32.0	157	36.1	177
OLS 37 - 300			76	3.8	19.0	72	30.4	116	34.2	130	38.0	144	43.2	164
OLS 37 - 1200	1.96 x 1.00		305	1.2	76.3	92	122.0	146	137.3	165	152.5	183	178.7	214
OLS 50 - 100	13	7	25	18.9	6.3	119	10.0	189	11.3	213	12.5	236	13.2	249
OLS 50 - 125			32	15.4	8.0	123	12.8	197	14.4	222	16.0	246	18.0	277
OLS 50 - 150			38	13.5	9.5	128	15.2	205	17.1	231	19.0	257	21.0	284
OLS 50 - 175			44	11.8	11.0	130	17.6	208	19.8	234	22.0	260	24.0	283
OLS 50 - 200			51	10.0	12.8	128	20.4	204	23.0	230	25.5	255	28.7	287
OLS 50 - 250			64	7.6	16.0	122	25.6	195	28.8	219	32.0	243	35.8	272
OLS 50 - 300			76	5.9	19.0	112	30.4	179	34.2	202	38.0	224	42.7	252
OLS 50 - 350	89	4.8	22.3	107	35.6	171	40.1	192	44.5	214	50.4	242		
OLS 50 - 400	102	3.4	25.5	87	40.8	139	45.9	156	51.0	173	58.4	199		
OLS 50 - 1200	2.50 x 1.46		305	1.6	76.3	122	122.0	195	137.3	220	152.5	244	172.0	275
OLS 62 - 100	16	8.7	25	22.9	6.3	144	10.0	229	11.3	258	12.5	286	12.7	291
OLS 62 - 125			32	22.5	8.0	180	12.8	288	14.4	324	16.0	360	16.6	374
OLS 62 - 150			38	18.9	9.5	180	15.2	287	17.1	323	19.0	359	20.0	378
OLS 62 - 175			44	16.8	11.0	185	17.6	296	19.8	333	22.0	370	23.4	393
OLS 62 - 200			51	15.4	12.8	197	20.4	314	23.0	353	25.5	393	26.8	413
OLS 62 - 250			64	10.5	16.0	168	25.6	269	28.8	302	32.0	336	33.2	349
OLS 62 - 300			76	9.8	19.0	186	30.4	298	34.2	335	38.0	372	41.8	410
OLS 62 - 350	89	8.4	22.3	187	35.6	299	40.1	336	44.5	374	48.6	408		
OLS 62 - 400	102	7.7	25.5	196	40.8	314	45.9	353	51.0	393	55.5	427		
OLS 62 - 450	115	5.9	28.8	170	46.0	271	51.8	305	57.5	339	62.2	367		
OLS 62 - 1200	2.80 x 1.88		305	2.5	76.3	191	122.0	305	137.3	343	152.5	381	170.9	427
OLS 75 - 100	19.5	9.5	25	53.0	6.3	334	10.0	530	11.3	596	12.5	663	12.7	673
OLS 75 - 125			32	43.1	8.0	345	12.8	552	14.4	621	16.0	690	17.0	733
OLS 75 - 150			38	34.3	9.5	326	15.2	521	17.1	587	19.0	652	20.3	696
OLS 75 - 175			44	30.4	11.0	334	17.6	535	19.8	602	22.0	669	23.5	714
OLS 75 - 200			51	25.5	12.8	326	20.4	520	23.0	585	25.5	650	27.4	699
OLS 75 - 250			64	20.6	16.0	330	25.6	527	28.8	593	32.0	659	34.7	715
OLS 75 - 300			76	16.2	30.4	492	38.0	616	34.2	554	42.4	687	42.4	687
OLS 75 - 350	89	14.2	22.3	317	35.6	506	40.1	569	44.5	632	48.9	694		
OLS 75 - 400	102	12.2	25.5	311	40.8	498	45.9	560	51.0	622	56.6	691		
OLS 75 - 450	115	11.0	28.8	317	46.0	506	51.8	569	57.5	633	64.1	705		
OLS 75 - 500	127	9.8	31.8	312	50.8	498	57.2	560	63.5	622	71.7	703		
OLS 75 - 550	140	8.3	35.0	291	56.0	465	63.0	523	70.0	581	79.8	662		
OLS 75 - 600	152	7.2	38.0	274	60.8	438	68.4	492	76.0	547	85.9	618		
OLS 75 - 1200	4.00 x 2.00		305	4.1	76.3	313	122.0	500	137.3	563	152.5	625	167.8	688



Code	D _H	D _d	L ₀	R	A	B	C	D	E							
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	25% L ₀	40% L ₀	45% L ₀	50% L ₀	approx.							
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000	do not use							
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N						
OLS 100 - 100	25.5	13	25	107.9	6.3	680	10.0	1079	11.3	1214	12.5	1349	12.6	1360		
OLS 100 - 125			32	80.4	8.0	643	12.8	1029	14.4	1158	16.0	1286	16.1	1294		
OLS 100 - 150			38	62.8	9.5	597	15.2	955	17.1	1074	19.0	1193	19.1	1199		
OLS 100 - 175			44	52.0	11.0	572	17.6	915	19.8	1030	22.0	1144	22.9	1191		
OLS 100 - 200			51	43.1	12.8	552	20.4	879	23.0	989	25.5	1099	27.3	1177		
OLS 100 - 250			64	35.3	16.0	565	25.6	904	28.8	1017	32.0	1130	33.3	1175		
OLS 100 - 300			76	29.4	19.0	559	30.4	894	34.2	1005	38.0	1117	39.5	1161		
OLS 100 - 350			89	24.5	22.3	546	35.6	872	40.1	981	44.5	1090	47.7	1169		
OLS 100 - 400			102	21.6	25.5	551	40.8	881	45.9	991	51.0	1102	56.4	1218		
OLS 100 - 450			115	18.6	28.8	536	46.0	856	51.8	963	57.5	1070	62.2	1157		
OLS 100 - 500			127	17.2	31.8	547	50.8	874	57.2	983	63.5	1092	69.4	1194		
OLS 100 - 550			140	15.7	35.0	550	56.0	879	63.0	989	70.0	1099	76.9	1207		
OLS 100 - 600			152	14.7	38.0	559	60.8	894	68.4	1005	76.0	1117	83.0	1220		
OLS 100 - 700			178	12.7	44.5	565	71.2	904	80.1	1017	89.0	1130	98.6	1252		
OLS 100 - 800	203	10.8	50.8	549	81.2	877	91.4	987	101.5	1096	111.9	1209				
OLS 100 - 1200	5.50 x 2.50	305	7.4	76.3	565	122.0	903	137.3	1016	152.5	1129	165.4	1224			
OLS 125 - 150	32	16	38	88.3	9.5	839	15.2	1342	17.1	1510	19.0	1678	19.2	1695		
OLS 125 - 175			44	76.5	11.0	842	17.6	1346	19.8	1515	22.0	1683	22.4	1714		
OLS 125 - 200			51	60.8	12.8	778	20.4	1240	23.0	1395	25.5	1550	25.8	1569		
OLS 125 - 250			64	49.0	16.0	784	25.6	1254	28.8	1411	32.0	1568	33.1	1622		
OLS 125 - 300			76	41.2	19.0	783	30.4	1252	34.2	1409	38.0	1566	39.9	1644		
OLS 125 - 350			89	35.3	22.3	787	35.6	1257	40.1	1414	44.5	1571	47.1	1663		
OLS 125 - 400			102	30.4	25.5	775	40.8	1240	45.9	1395	51.0	1550	54.4	1654		
OLS 125 - 450			115	27.5	28.8	792	46.0	1265	51.8	1423	57.5	1581	61.1	1680		
OLS 125 - 500			127	23.5	31.8	747	50.8	1194	57.2	1343	63.5	1492	68.2	1603		
OLS 125 - 550			140	21.6	35.0	756	56.0	1210	63.0	1361	70.0	1512	75.7	1635		
OLS 125 - 600			152	19.6	38.0	745	60.8	1192	68.4	1341	76.0	1490	82.3	1613		
OLS 125 - 700			178	17.7	44.5	788	71.2	1260	80.1	1418	89.0	1575	97.3	1722		
OLS 125 - 800			203	14.7	50.8	747	81.2	1194	91.4	1343	101.5	1492	110.2	1620		
OLS 125 - 1000			254	12.7	63.5	806	101.6	1290	114.3	1452	127.0	1613	137.9	1751		
OLS 125 - 1200	6.90 x 3.00	305	9.8	76.3	748	122.0	1196	137.3	1345	152.5	1495	163.8	1605			
OLS 150 - 200	38.5	19.5	51	71.4	12.8	042	20.4	1661	23.0	1639	25.5	2076	26.3	2141		
OLS 150 - 250			64	62.8	16.0	1005	25.6	1608	28.8	1809	32.0	2010	33.1	2079		
OLS 150 - 300			76	51.0	19.0	969	30.4	1550	34.2	1744	38.0	1938	39.9	2035		
OLS 150 - 350			89	43.1	22.6	961	35.6	1534	40.1	1726	44.5	1918	47.4	2043		
OLS 150 - 400			102	36.3	25.5	926	40.8	1481	45.9	1666	51.0	1851	54.7	1986		
OLS 150 - 450			115	32.4	28.8	933	46.0	1490	51.8	1677	57.5	1863	61.4	1989		
OLS 150 - 500			127	29.4	31.8	935	50.8	1494	57.2	1680	63.5	1867	68.1	2002		
OLS 150 - 550			140	27.0	35.0	945	56.0	1512	63.0	1701	70.0	1890	76.8	2074		
OLS 150 - 600			152	24.5	38.0	931	60.8	1490	68.4	1676	76.0	1862	82.5	2021		
OLS 150 - 700			178	21.6	44.5	961	71.2	1539	80.1	1730	89.0	1922	97.9	2115		
OLS 150 - 800			203	18.6	50.8	945	81.2	1510	91.4	1699	101.5	1888	110.3	2052		
OLS 150 - 1000			254	14.7	63.5	933	101.6	1494	114.3	1680	127.0	1867	140.0	2058		
OLS 150 - 1200			8.00 x 3.50	305	10.8	76.3	824	122.0	1318	137.3	1482	152.5	1647	164.1	1772	
OLS 200 - 250			51	25.5	64	156.9	16.0	2510	25.6	4017	28.8	4519	32.0	5021	32.1	5036
OLS 200 - 300	76	132.4			19.0	2516	30.4	4025	34.2	4528	38.0	5031	41.2	5455		
OLS 200 - 350	89	114.7			22.3	2558	35.6	4083	40.1	4594	44.5	5104	48.1	5517		
OLS 200 - 400	102	98.1			25.5	2502	40.8	4002	45.9	4503	51.0	5003	54.7	5366		
OLS 200 - 450	115	87.3			28.8	2514	46.0	4016	51.8	4518	57.5	5020	62.2	5430		
OLS 200 - 500	127	77.5			31.8	2465	50.8	3937	57.2	4429	63.5	4921	69.4	5379		
OLS 200 - 550	140	69.6			35.0	2436	56.0	3898	63.0	4385	70.0	4872	76.8	5345		
OLS 200 - 600	152	64.7			38.0	2459	60.8	3934	68.4	4425	76.0	4917	81.9	5299		
OLS 200 - 700	178	53.0			44.5	2359	71.2	3774	80.1	4245	89.0	4717	98.1	5199		
OLS 200 - 800	203	47.1			50.8	239	81.2	3825	91.4	4303	101.5	4781	112.5	5299		
OLS 200 - 1000	254	37.5			63.5	2381	101.6	3810	114.3	4286	127.0	4763	141.2	5295		
OLS 200 - 1200	11.50 x 5.00	305			31.4	76.3	2396	122.0	3831	137.3	4310	152.5	4789	169.9	5335	
OLS 250 - 300	63	38			76	189.3	19.0	3597	30.4	5755	34.2	6474	38.0	7193	38.4	7269
OLS 250 - 350					89	156.9	22.3	3499	35.6	5586	40.1	6284	44.5	6982	46.0	7217
OLS 250 - 400			102	133.4	25.5	3402	40.8	5443	45.9	6123	51.0	6803	52.8	7044		
OLS 250 - 450			115	116.7	28.8	3361	46.0	5368	51.8	6039	57.5	6710	59.7	6967		
OLS 250 - 500			127	104.0	31.8	3307	50.8	5283	57.2	5944	63.5	6604	67.4	7010		
OLS 250 - 550			140	93.1	35.0	3259	56.0	5214	63.0	5865	70.0	6517	74.7	6955		
OLS 250 - 600			152	84.3	38.0	3203	60.8	5125	68.4	5766	76.0	6407	81.9	6904		
OLS 250 - 700			178	82.6	44.5	3231	71.2	5169	80.1	6616	89.0	6461	98.5	7151		
OLS 250 - 800			203	62.8	50.8	3190	81.2	5099	91.4	5737	101.5	6374	109.1	6851		
OLS 250 - 1000			254	47.1	63.5	2991	101.6	4785	114.3	5384	127.0	5982	140.2	6603		
OLS 250 - 1200			11.76 x 7.20	305	38.2	76.3	2915	122.0	4660	137.3	5243	152.5	5826	162.9	6223	







OLS
Metric

- EN** Medium load springs
Silver-red color
- ES** Muelles carga mediana
Color plateado-rojo



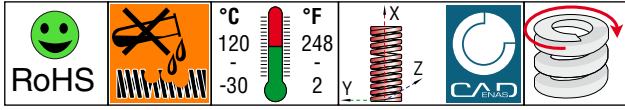
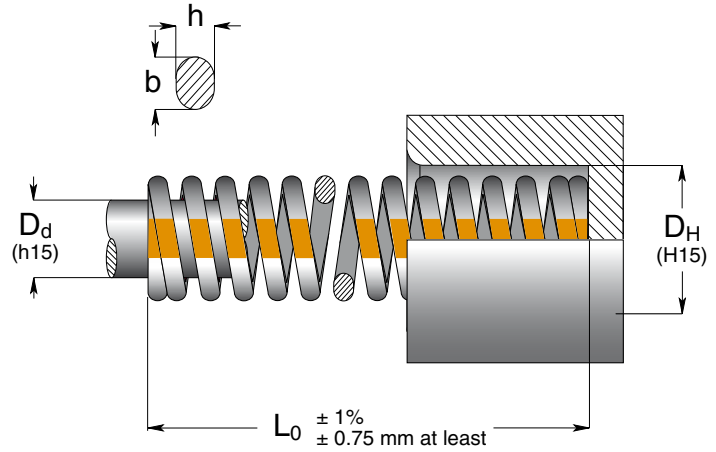
Code	D _H D _d		L ₀	R	A		B		C		D		E	
	Hole Diameter	Rod Diameter			Free Length	Spring Constant	20% L ₀	25% L ₀	31% L ₀	37% L ₀	do not use	approx.		
	b x h		± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000	do not use		do not use		do not use		
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N
OMS 37 - 100	9.5	4.7	25	17.7	5.0	89	6.3	112	7.8	137	9.3	165	10.2	181
OMS 37 - 125			32	15.2	6.4	97	8.0	122	9.9	151	11.8	179	14.2	216
OMS 37 - 150			38	13.2	7.6	100	9.5	125	11.8	155	14.1	186	16.8	222
OMS 37 - 175			44	11.3	8.8	99	11.0	124	13.6	154	16.3	184	19.4	219
OMS 37 - 200			51	8.4	10.2	86	12.8	108	15.8	133	18.9	159	23.4	197
OMS 37 - 250			64	7.2	12.8	92	16.0	115	19.8	143	23.7	171	28.2	203
OMS 37 - 300			76	5.8	15.2	88	19.0	110	23.6	137	28.1	163	34.2	198
OMS 37 - 1200			1.90 x 1.30		305	1.5	61.0	91	76.3	114	94.6	142	112.9	169
OMS 50 - 100	13	7	25	30.4	5.0	152	6.3	192	7.8	236	9.3	283	11.9	362
OMS 50 - 125			32	22.1	6.4	141	8.0	177	9.9	219	11.8	261	16.2	358
OMS 50 - 150			38	19.1	7.6	145	9.5	181	11.8	225	14.1	269	18.7	357
OMS 50 - 175			44	16.1	8.8	142	11.0	177	13.6	220	16.3	262	21.3	343
OMS 50 - 200			51	15.0	10.2	153	12.8	192	15.8	237	18.9	284	25.6	384
OMS 50 - 250			64	11.8	12.8	151	16.0	189	19.8	234	23.7	280	32.4	382
OMS 50 - 300			76	9.8	15.2	149	19.0	186	23.6	231	28.1	275	39.0	382
OMS 50 - 350			89	8.1	17.8	144	22.3	181	27.6	223	32.9	266	45.9	372
OMS 50 - 400	102	6.3	20.4	129	25.5	161	31.6	199	37.7	238	52.3	329		
OMS 50 - 1200	2.50 x 1.50		305	2.1	61.0	128	76.3	160	94.6	199	112.9	237	152.5	320
OMS 62 - 100	16	8.7	25	56.8	5.0	284	6.3	358	7.8	440	9.3	528	10.5	596
OMS 62 - 125			32	38.2	6.4	244	8.0	306	9.9	379	11.8	451	13.2	504
OMS 62 - 150			38	33.3	7.6	253	9.5	316	11.8	392	14.1	470	17.2	573
OMS 62 - 175			44	29.2	8.8	257	11.0	321	13.6	398	16.3	476	19.4	566
OMS 62 - 200			51	25.5	10.2	260	12.8	326	15.8	403	18.9	482	24.2	617
OMS 62 - 250			64	19.6	12.8	251	16.0	314	19.8	389	23.7	464	29.2	572
OMS 62 - 300			76	16.2	15.2	246	19.0	308	23.6	382	28.1	455	36.3	588
OMS 62 - 350			89	13.7	17.8	244	22.3	306	27.6	378	32.9	451	41.7	571
OMS 62 - 400	102	12.7	20.4	259	15.5	324	31.6	402	37.7	479	48.9	621		
OMS 62 - 450	115	10.3	23.0	237	28.8	297	35.7	367	42.6	439	53.1	547		
OMS 62 - 1200	3.20 x 2.00		305	3.9	61.0	238	76.3	298	94.6	369	112.9	440	141.6	552
OMS 75 - 100	19.5	9.5	25	99.0	5.0	495	6.3	624	7.8	767	9.3	921	10.8	1069
OMS 75 - 125			32	77.5	6.4	496	8.0	620	9.9	769	11.8	915	13.9	1077
OMS 75 - 150			38	55.9	7.6	425	9.5	531	11.8	659	14.1	788	17.1	956
OMS 75 - 175			44	50.0	8.8	440	11.0	550	13.6	682	16.3	815	19.6	980
OMS 75 - 200			51	42.2	10.2	430	12.8	540	15.8	667	18.9	798	22.4	945
OMS 75 - 250			64	33.3	12.8	426	16.0	533	19.8	661	23.7	789	28.5	949
OMS 75 - 300			76	25.0	15.2	380	19.0	475	23.6	589	28.1	703	33.5	838
OMS 75 - 350			89	23.1	17.8	411	22.3	515	27.6	637	32.9	760	40.2	929
OMS 75 - 400	102	20.6	20.4	420	25.5	525	31.6	651	37.7	777	45.5	937		
OMS 75 - 450	115	18.6	23.0	428	28.8	536	35.7	663	42.6	792	50.3	936		
OMS 75 - 500	127	17.7	25.4	450	31.8	563	39.4	697	47.0	832	56.6	1002		
OMS 75 - 550	140	16.2	28.0	454	35.0	567	43.4	703	51.8	839	61.9	1003		
OMS 75 - 600	152	13.9	30.4	423	38.0	528	47.1	655	56.2	781	67.6	940		
OMS 75 - 1200	4.00 x 2.40		305	6.4	61.0	390	76.3	488	94.6	605	112.9	723	136.3	872



Code	D _H	D _d	L ₀	R	A		B		C		D		E			
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	 20% L ₀	 25% L ₀	 31% L ₀	 37% L ₀		approx. do not use						
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000								
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N		
OMS 100 - 100	25.5	13	25	137.3	5.0	687	6.3	865	7.8	1064	9.3	1277	9.9	1359		
OMS 100 - 125			32	105.9	6.4	678	8.0	847	9.9	1051	11.8	1250	13.3	1408		
OMS 100 - 150			38	88.3	7.6	671	9.5	839	11.8	1040	14.1	1245	16.5	1457		
OMS 100 - 175			44	76.5	8.8	673	11.0	842	13.6	1043	16.3	1247	19.3	1476		
OMS 100 - 200			51	63.7	10.2	650	12.8	815	15.8	1007	18.9	1204	22.0	1401		
OMS 100 - 250			64	49.0	12.8	627	16.0	874	19.8	972	23.7	1161	27.4	1343		
OMS 100 - 300			76	41.7	15.2	634	19.0	792	23.6	982	28.1	1172	32.8	1368		
OMS 100 - 350			89	35.8	17.8	637	22.3	798	27.6	988	32.9	1178	39.0	1396		
OMS 100 - 400			102	31.9	20.4	651	25.5	813	31.6	1009	37.7	1203	44.7	1426		
OMS 100 - 450			115	27.0	23.0	621	28.8	778	35.7	963	42.6	1150	49.8	1345		
OMS 100 - 500			127	24.5	25.4	622	31.8	779	39.4	965	47.0	1152	56.3	1379		
OMS 100 - 550			140	22.6	28.0	633	35.0	791	43.4	981	51.8	1171	63.0	1424		
OMS 100 - 600			152	19.6	30.4	598	38.0	745	47.1	924	56.2	1102	66.2	1298		
OMS 100 - 700			178	17.7	35.6	630	44.5	788	55.2	977	65.9	1166	77.9	1379		
OMS 100 - 800	203	15.7	40.6	637	50.8	798	62.9	988	75.1	1179	88.5	1389				
OMS 100 - 1200	5.50 x 3.00	305	10.8	61.0	659	76.3	824	94.6	1021	112.9	1219	136.6	1475			
OMS 125 - 150	32	16	38	196.1	7.6	1490	9.5	1863	11.8	2310	14.1	2765	16.1	3157		
OMS 125 - 175			44	176.5	8.8	1553	11.0	1942	13.6	2407	16.3	2877	18.5	3265		
OMS 125 - 200			51	147.1	10.2	1500	12.8	1883	15.8	2326	18.9	2780	21.4	3148		
OMS 125 - 250			64	107.9	12.8	1381	16.0	1726	19.8	2141	23.7	2557	27.4	2956		
OMS 125 - 300			76	90.2	15.2	1371	19.0	1714	23.6	2125	28.1	2535	32.7	2950		
OMS 125 - 350			89	74.5	17.8	1326	22.3	1661	27.6	2055	32.9	2451	39.1	2913		
OMS 125 - 400			102	64.7	20.4	1320	25.5	1650	31.6	2046	37.7	2439	43.4	2808		
OMS 125 - 450			115	55.9	23.0	1286	28.8	1610	35.7	1993	42.6	2381	49.7	2778		
OMS 125 - 500			127	47.1	25.4	1196	31.8	1498	39.4	1854	47.0	2214	54.1	2548		
OMS 125 - 550			140	44.1	28.0	1235	35.0	1544	43.4	1914	51.8	2284	60.0	2646		
OMS 125 - 600			152	40.7	30.4	1237	38.0	1547	47.1	1918	56.2	2287	66.8	2719		
OMS 125 - 700			178	34.3	35.6	1221	44.5	1526	55.2	1893	65.9	2260	78.2	2682		
OMS 125 - 800			203	31.4	40.6	1275	50.8	1595	62.9	1976	75.1	2358	87.2	2738		
OMS 125 - 1000			254	22.1	50.8	1123	63.5	1403	78.7	1740	94.0	2077	110.3	2438		
OMS 125 - 1200	7.20 x 4.00	305	20.6	61.0	1257	76.3	1572	94.6	1948	112.9	2326	133.4	2748			
OMS 150 - 200	38.5	19.5	51	178.5	10.2	1821	12.8	2285	15.8	2822	18.9	3374	21.5	3838		
OMS 150 - 250			64	132.4	12.8	1695	16.0	2118	19.8	2627	23.7	3138	26.3	3482		
OMS 150 - 300			76	107.9	15.2	1640	19.0	2050	23.6	2542	28.1	3032	33.2	3582		
OMS 150 - 350			89	94.1	17.8	1675	22.3	2098	27.6	2596	32.9	3096	40.0	3764		
OMS 150 - 400			102	82.4	20.4	1681	25.5	2101	31.6	2605	37.7	3106	44.7	3683		
OMS 150 - 450			115	73.7	23.0	1695	28.8	2123	35.7	2627	42.6	3140	50.1	3692		
OMS 150 - 500			127	62.8	25.4	1595	31.8	1997	39.4	2472	47.0	2952	55.2	3467		
OMS 150 - 550			140	58.8	28.0	1646	35.0	2058	43.4	2552	51.8	3046	61.3	3604		
OMS 150 - 600			152	52.0	30.4	1581	38.0	1976	47.1	2450	56.2	222	67.6	3515		
OMS 150 - 700			178	44.1	35.6	1570	44.5	1962	55.2	2433	65.9	2906	79.2	3493		
OMS 150 - 800			203	37.3	40.6	1514	50.8	1895	62.9	2347	75.1	2801	89.7	3346		
OMS 150 - 1000			254	31.4	50.8	1595	63.5	1994	78.7	2472	94.0	2952	113.0	3548		
OMS 150 - 1200			8.00 x 5.10	305	24.5	61.0	1495	76.3	1869	94.6	2316	112.9	2766	138.7	3398	
OMS 200 - 250			51	25.5	64	210.8	12.8	2698	16.0	3373	19.8	4182	23.7	4996	27.3	5755
OMS 200 - 300	76	171.6			15.2	2608	19.0	3260	23.6	4043	28.1	4822	31.1	5337		
OMS 200 - 350	89	142.2			17.8	2531	22.3	3171	27.6	3923	32.9	4678	38.2	5432		
OMS 200 - 400	102	119.6			20.4	2440	25.5	3050	31.6	3782	37.7	4509	43.5	5203		
OMS 200 - 450	115	107.9			23.0	2482	28.8	3108	35.7	3847	42.6	4597	48.3	5212		
OMS 200 - 500	127	100.0			25.4	2540	31.8	3180	39.4	3937	47.0	4700	55.1	5510		
OMS 200 - 550	140	90.2			28.0	2526	35.0	3157	43.4	3915	51.8	4672	61.4	5538		
OMS 200 - 600	152	84.3			30.4	2563	38.0	3203	47.1	3972	56.2	4738	67.5	5690		
OMS 200 - 700	178	71.1			35.6	2531	44.5	3164	55.2	3923	65.9	4685	79.1	5624		
OMS 200 - 800	203	61.8			40.6	2509	50.8	3139	62.9	3889	75.1	4641	89.2	5513		
OMS 200 - 1000	254	49.5			50.8	2515	63.5	3143	78.7	3898	94.0	4653	113.2	5603		
OMS 200 - 1200	11.40 x 5.80	305			43.1	61.0	2629	76.3	3289	94.6	4075	112.9	4866	143.4	6181	
OMS 250 - 300	63	38			76	300.1	15.2	4562	19.0	5702	23.6	7070	28.1	8433	29.3	8793
OMS 250 - 350					89	240.3	17.8	4277	22.3	5359	27.6	6630	32.9	4906	36.1	8675
OMS 250 - 400			102	211.8	20.4	4321	25.5	5401	31.6	6697	37.7	4985	43.9	9298		
OMS 250 - 450			115	188.3	23.0	4331	28.8	5423	35.7	6713	42.6	8022	48.4	9114		
OMS 250 - 500			127	162.8	25.4	4135	31.8	5177	39.4	6409	47.0	7652	55.2	8987		
OMS 250 - 550			140	156.9	28.0	1393	35.0	5491	43.4	6809	51.8	8127	63.9	9555		
OMS 250 - 600			152	147.1	30.4	4472	38.0	5590	47.1	6931	56.2	8267	66.0	9709		
OMS 250 - 700			178	108.9	35.6	3877	44.5	4846	55.2	6009	65.9	7177	76.9	8374		
OMS 250 - 800			203	94.1	40.6	3820	50.8	4780	62.9	5922	75.1	7067	86.7	8158		
OMS 250 - 900			229	86.3	45.8	3953	57.2	4945	71.0	6126	84.7	7310	99.0	8544		
OMS 250 - 1000			254	75.5	50.8	3835	63.5	4794	78.7	5945	94.0	7097	112.2	8471		
OMS 250 - 1200			11.50 x 9.70	305	64.7	61.0	3947	76.3	4937	94.6	6117	112.9	7305	132.9	8599	

OMS
Metric

- EN** Heavy load springs
Silver-gold color
- ES** Muelles carga fuerte
Color plateado-oro

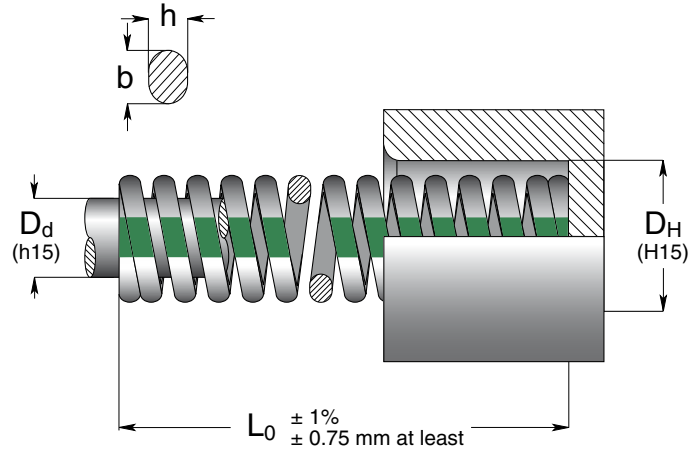
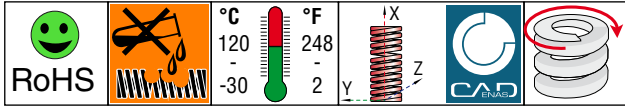


Code	D _H D _d		L ₀	R	A		B		C		D		E	
	Hole Diameter	Rod Diameter			Free Length	Spring Constant	15% L ₀	20% L ₀	25% L ₀	30% L ₀	do not use	approx.		
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000			do not use			
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N
OHS 37 - 100	9.5	4.7	25	22.5	3.8	86	5.0	113	6.3	141	7.5	169	9.2	207
OHS 37 - 125			32	18.6	4.8	89	6.4	119	8.0	149	9.6	179	12.1	225
OHS 37 - 150			38	15.9	5.7	91	7.6	121	9.5	151	11.4	181	13.2	210
OHS 37 - 175			44	13.7	6.6	90	8.8	121	11.0	151	13.2	181	15.1	207
OHS 37 - 200			51	11.8	7.7	91	10.2	120	12.8	150	15.3	180	19.5	230
OHS 37 - 250			64	8.8	9.6	84	12.8	113	16.0	141	19.2	169	21.8	192
OHS 37 - 300			76	6.4	11.4	73	15.2	97	19.0	122	22.8	146	27.9	179
OHS 37 - 1200			1.90 x 1.50		305	1.7	45.8	78	61.0	104	76.3	130	91.5	156
OHS 50 - 100	13	7	25	37.3	3.8	142	5.0	187	6.3	233	7.5	280	9.8	366
OHS 50 - 125			32	32.5	4.8	156	6.4	208	8.0	260	9.6	312	13.6	442
OHS 50 - 150			38	28.4	5.7	162	7.6	216	9.5	270	11.4	324	14.6	415
OHS 50 - 175			44	24.5	6.6	162	8.8	216	11.0	270	13.2	323	18.1	443
OHS 50 - 200			51	18.6	7.7	143	10.2	190	12.8	237	15.3	285	22.3	415
OHS 50 - 250			64	15.7	9.6	151	12.8	201	16.0	251	19.2	301	27.3	429
OHS 50 - 300			76	13.7	11.4	156	15.2	208	19.0	260	22.8	312	33.1	453
OHS 50 - 350			89	10.8	13.4	145	17.8	192	22.3	240	26.7	288	38.9	420
OHS 50 - 400			102	7.4	15.3	113	20.4	151	25.5	189	30.6	226	43.8	324
OHS 50 - 1200			2.40 x 1.90		305	3.1	45.8	142	61.0	189	76.3	236	91.5	284
OHS 62 - 100	16	8.7	25	78.2	3.8	297	5.0	391	6.3	489	7.5	587	8.4	657
OHS 62 - 125			32	49.8	4.8	287	6.4	383	8.0	398	9.6	574	10.5	628
OHS 62 - 150			38	41.0	5.7	291	7.6	388	9.5	390	11.4	581	13.6	694
OHS 62 - 175			44	43.1	6.6	284	8.8	379	11.0	474	13.2	569	15.9	685
OHS 62 - 200			51	38.2	7.7	294	10.2	390	12.8	487	15.3	584	18.9	722
OHS 62 - 250			64	31.4	9.6	301	12.8	402	16.0	502	19.2	603	24.9	782
OHS 62 - 300			76	12.5	11.4	279	15.2	372	19.0	238	22.8	559	29.2	715
OHS 62 - 350			89	20.6	13.4	276	17.8	367	22.3	458	26.7	550	34.5	711
OHS 62 - 400			102	18.6	15.3	285	20.4	379	25.5	474	30.6	569	39.1	727
OHS 62 - 450			115	15.7	17.3	272	23.0	361	28.8	451	34.5	542	44.0	691
OHS 62 - 1200	3.10 x 2.50		305	5.7	45.8	261	61.0	348	76.3	435	91.5	522	103.6	591
OHS 75 - 100	19.5	9.5	25	181.4	3.8	689	5.0	907	6.3	1134	7.5	1361	8.5	1542
OHS 75 - 125			32	137.3	4.8	659	6.4	879	8.0	1098	9.6	1318	11.0	1510
OHS 75 - 150			38	107.9	5.7	615	7.6	820	9.5	1025	11.4	1230	12.7	1370
OHS 75 - 175			44	94.1	6.6	621	8.8	828	11.0	1035	13.2	1242	15.2	1430
OHS 75 - 200			51	78.5	7.7	604	10.2	801	12.8	1001	15.3	1201	17.8	1397
OHS 75 - 250			64	65.0	9.6	624	12.8	832	16.0	1040	19.2	1248	22.9	1489
OHS 75 - 300			76	56.9	11.4	649	15.2	865	19.0	1081	22.8	1297	27.8	1582
OHS 75 - 350			89	47.1	13.4	634	17.8	838	22.3	1048	26.7	1258	32.1	1512
OHS 75 - 400			102	41.2	15.3	630	20.4	840	25.5	1051	30.6	1261	37.1	1529
OHS 75 - 450			115	36.3	17.3	628	23.0	835	28.8	1044	34.5	1252	43.0	1561
OHS 75 - 500			127	32.4	19.1	619	25.4	823	31.8	1029	38.1	1234	46.8	1516
OHS 75 - 550			140	29.4	21.0	617	28.0	823	35.0	1029	42.0	1235	53.1	1561
OHS 75 - 600			152	25.5	22.8	581	30.4	775	38.0	969	45.6	1263	56.4	1438
OHS 75 - 1200			4.00 x 3.20		305	14.7	45.8	673	61.0	897	76.3	1121	91.5	1345

Code	D _H	D _d	L ₀	R	A	B	C	D	E					
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	15% L ₀	20% L ₀	25% L ₀	30% L ₀	approx. do not use					
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000						
	mm	mm	mm	N/mm	mm N	mm N	mm N	mm N	mm N					
OHS 100 - 100	25.5	13	25	333.4	3.8	1267	5.0	1667	6.3	2084	7.5	2501	7.7	2567
OHS 100 - 125			32	257.4	4.8	1236	6.4	1647	8.0	2059	9.6	2471	10.6	2728
OHS 100 - 150			38	210.8	5.7	1202	7.6	1602	9.5	2003	11.4	2403	12.8	2698
OHS 100 - 175			44	176.5	6.6	1165	8.8	1553	11.0	1942	13.2	2330	15.2	2683
OHS 100 - 200			51	148.1	7.7	1140	10.2	1511	12.8	1888	15.3	2266	17.7	2621
OHS 100 - 250			64	119.6	9.6	1148	12.8	1531	16.0	1914	19.2	2296	22.9	2739
OHS 100 - 300			76	100.0	11.4	1140	15.2	1520	19.0	1900	22.8	2280	27.5	2750
OHS 100 - 350			89	83.4	13.4	1118	17.8	1485	22.3	1856	26.7	2227	32.6	2719
OHS 100 - 400			102	73.6	15.3	1126	20.4	1501	25.5	1877	30.6	2252	39.7	2922
OHS 100 - 450			115	63.7	17.3	1102	23.0	1465	28.8	1831	34.5	2198	42.7	2720
OHS 100 - 500			127	56.9	19.1	1087	25.4	1445	31.8	1807	38.1	2168	47.9	2726
OHS 100 - 550			140	51.0	21.0	1071	28.0	1428	35.0	1785	42.0	2142	52.9	2698
OHS 100 - 600			152	47.1	22.8	1074	30.4	1432	38.0	1790	45.6	2148	57.0	2685
OHS 100 - 700			178	41.2	26.7	100	35.6	1467	44.5	1833	53.4	2200	68.2	2810
OHS 100 - 800	203	36.3	30.5	1107	40.6	1474	50.8	1842	60.9	2211	77.4	2810		
OHS 100 - 1200	305	22.6	45.8	1035	61.0	1379	76.3	1723	91.5	2068	113.0	2554		
OHS 125 - 150	32	16	38	362.9	5.7	2069	7.6	2758	9.5	3448	11.4	4137	12.6	4573
OHS 125 - 175			44	307.9	6.6	2032	8.8	2710	11.0	3387	13.2	4064	13.7	4218
OHS 125 - 200			51	262.8	7.7	2024	10.2	2681	12.8	3351	15.3	4021	16.0	4205
OHS 125 - 250			64	205.9	9.6	1977	12.8	2636	16.0	3294	19.2	3953	21.8	4489
OHS 125 - 300			76	171.6	11.4	1956	15.2	2608	19.0	3260	22.8	3912	26.7	4582
OHS 125 - 350			89	147.1	13.4	1971	17.8	2618	22.3	3273	26.7	3928	29.9	4398
OHS 125 - 400			102	127.5	15.3	1951	20.4	2601	25.5	3251	30.6	3902	37.1	4730
OHS 125 - 450			115	112.8	17.3	1951	23.0	2594	28.8	3243	34.5	3892	41.6	4692
OHS 125 - 500			127	121.0	19.1	1929	25.4	2565	31.8	3842	38.1	3848	45.1	4555
OHS 125 - 550			140	88.3	21.0	1854	28.0	2472	35.0	3091	42.0	3709	51.0	4503
OHS 125 - 600			152	80.9	22.8	1845	30.4	2459	38.0	3074	45.6	3689	54.6	4417
OHS 125 - 700			178	68.6	26.7	1832	35.6	2442	44.5	3053	53.4	3683	65.0	4459
OHS 125 - 800			203	59.8	30.5	1824	40.6	2428	50.8	3035	60.9	3842	75.7	4527
OHS 125 - 1000			254	46.9	38.1	1787	50.8	2383	63.5	2978	76.2	3574	95.6	4484
OHS 125 - 1200	305	39.2	45.8	1795	61.0	2391	76.3	2989	91.5	3587	118.0	4626		
OHS 150 - 200	38.5	19.5	51	313.8	7.7	2416	10.2	3201	12.8	4001	15.3	4801	21.4	6715
OHS 150 - 250			64	230.5	9.6	2213	12.8	2750	16.0	3688	19.2	4426	28.8	6638
OHS 150 - 300			76	196.1	11.4	2236	15.2	2781	19.0	3726	22.8	4471	33.6	6589
OHS 150 - 350			89	171.6	13.4	2299	17.8	3054	22.3	3818	26.7	4582	40.3	6915
OHS 150 - 400			102	142.2	15.3	2176	20.4	2901	25.5	3626	30.6	4351	46.1	6555
OHS 150 - 450			115	124.5	17.3	2154	23.0	2864	28.8	3579	34.5	4295	52.2	6499
OHS 150 - 500			127	112.8	19.1	2154	25.4	2865	31.8	3581	38.1	4298	58.4	6588
OHS 150 - 550			140	103.0	21.0	2163	28.0	2884	35.0	3605	42.0	4326	64.5	6644
OHS 150 - 600			152	93.2	22.8	2125	30.4	2833	38.0	3542	45.6	4250	70.8	6599
OHS 150 - 700			178	80.4	26.7	2147	35.6	2862	44.5	3578	53.4	4293	82.0	6593
OHS 150 - 800			203	70.6	30.5	2153	40.6	2866	50.8	3583	60.9	4300	95.8	6763
OHS 150 - 1000			254	56.9	38.1	2168	50.8	2891	63.5	3613	76.2	4336	118.6	6748
OHS 150 - 1200			305	47.1	45.8	2157	61.0	2873	76.3	3591	91.5	4310	145.5	6853
OHS 200 - 250			51	25.5	64	392.3	9.6	3766	12.8	5021	16.0	6277	19.2	7532
OHS 200 - 300	76	328.5			11.4	3745	15.2	4993	19.0	6242	22.8	7490	27.2	8935
OHS 200 - 350	89	274.6			13.4	3680	17.8	4888	22.3	6110	26.7	7332	32.0	8787
OHS 200 - 400	102	235.4			15.3	3602	20.4	4802	25.5	6003	30.6	7203	36.9	8686
OHS 200 - 450	115	205.9			17.3	3562	23.0	4736	28.8	5920	34.5	7104	42.8	8813
OHS 200 - 500	127	186.3			19.1	3558	25.4	4732	31.8	5915	38.1	7098	47.5	8849
OHS 200 - 550	140	166.7			21.0	3501	28.0	4668	35.0	5835	42.0	7001	54.2	9035
OHS 200 - 600	152	147.1			22.8	3354	30.4	4472	38.0	5590	45.6	6708	58.1	8547
OHS 200 - 700	178	127.5			26.7	3404	35.6	4539	44.5	5674	53.4	6809	69.6	8874
OHS 200 - 800	203	112.8			30.5	3440	40.6	4580	50.8	5725	60.9	6870	80.3	9058
OHS 200 - 1000	254	88.3			38.1	3364	50.8	4486	63.5	5607	76.2	6728	101.7	8980
OHS 200 - 1200	305	70.6			45.8	3233	61.0	4307	76.3	5383	91.5	6460	123.9	8747

OHS
Metric

- EN** Extra-heavy load springs
Silver-green color
- ES** Muelles carga extra-fuerte
Color plateado-verde



Code	D _H D _d		L ₀	R	A		B		C		D		E			
	Hole Diameter	Rod Diameter			Free Length	Spring Constant	15% L ₀	20% L ₀	225% L ₀	25% L ₀	approx. do not use					
	b x h			± 10%	+ 3,000,000	~ 1,500,000	300 - 500,000	100 - 200,000								
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N		
OES 37 - 100	9.5	4.7	25	38.5	3.8	146	5.0	193	5.6	217	6.3	243	7.9	304		
OES 37 - 125			32	29.7	4.8	143	6.4	190	7.2	214	8.0	238	10.9	324		
OES 37 - 150			38	25.4	5.7	145	7.6	193	8.6	217	9.5	241	13.4	340		
OES 37 - 175			44	20.2	6.6	133	8.8	178	9.9	200	11.0	222	13.8	279		
OES 37 - 200			51	17.6	7.7	136	10.2	180	11.5	202	12.8	225	16.8	296		
OES 37 - 250			64	14.0	9.6	134	12.8	179	14.4	202	16.0	224	20.2	283		
OES 37 - 300			76	11.4	11.4	130	15.2	173	17.1	195	19.0	217	25.9	295		
OES 37 - 1200	1.97 x 1.50		305	2.6	45.8	119	61.0	159	68.6	178	76.3	198	113.5	295		
OES 50 - 100	13	7	25	56.1	3.8	213	5.0	281	5.6	316	6.3	353	8.5	477		
OES 50 - 125			32	42.1	4.8	202	6.4	269	7.2	303	8.0	337	10.5	442		
OES 50 - 150			38	35.0	5.7	200	7.6	266	8.6	299	9.5	333	12.8	448		
OES 50 - 175			44	29.8	6.6	197	8.8	262	9.9	295	11.0	328	14.0	417		
OES 50 - 200			51	24.5	7.7	198	10.2	250	11.5	281	12.8	314	16.1	394		
OES 50 - 250			64	20.2	9.6	194	12.8	259	14.4	291	16.0	323	21.1	426		
OES 50 - 300			76	15.8	11.4	180	15.2	240	17.1	270	19.0	300	24.5	387		
OES 50 - 350			89	14.0	13.4	188	17.8	249	20.0	280	22.3	312	30.0	420		
OES 50 - 400			102	10.8	15.3	165	20.4	220	23.0	248	25.5	275	35.6	384		
OES 50 - 1200			2.50 x 2.00		305	4.4	45.8	202	61.0	268	68.6	302	76.3	336	104.7	461
OES 62 - 100	16	8.7	25	110.3	3.8	419	5.0	552	5.6	620	6.3	695	7.8	860		
OES 62 - 125			32	82.3	4.8	395	6.4	527	7.2	593	8.0	658	10.2	839		
OES 62 - 150			38	66.7	5.7	380	7.6	507	8.6	570	9.5	634	12.2	814		
OES 62 - 175			44	56.1	6.6	370	8.8	494	9.9	555	11.0	617	14.0	785		
OES 62 - 200			51	50.8	7.7	391	10.2	518	11.5	583	12.8	650	16.6	843		
OES 62 - 250			64	38.5	9.6	370	12.8	493	14.4	554	16.0	616	19.5	751		
OES 62 - 300			76	31.5	11.4	359	15.2	479	17.1	539	19.0	599	25.8	813		
OES 62 - 350			89	28.0	13.4	375	17.8	498	20.0	561	22.3	624	29.5	826		
OES 62 - 400			102	23.6	15.3	361	20.4	481	23.0	542	25.5	602	33.9	800		
OES 62 - 450			115	20.6	17.3	356	22.0	474	25.9	533	28.8	593	38.3	789		
OES 62 - 1200			3.10 x 2.76		305	7.8	45.8	357	61.0	476	68.6	535	76.3	595	89.9	701
OES 75 - 100	19.5	9.5	25	205.9	3.8	782	5.0	1030	5.6	1158	6.3	1297	7.1	1462		
OES 75 - 125			32	166.7	4.8	800	6.4	1067	7.2	1200	8.0	1334	9.4	1567		
OES 75 - 150			38	132.4	5.7	755	7.5	1006	8.6	1132	9.5	1258	11.6	1536		
OES 75 - 175			44	117.7	6.6	777	8.8	1036	9.9	1165	11.0	1295	13.9	1636		
OES 75 - 200			51	98.1	7.7	755	10.2	1001	11.5	1126	12.8	1256	16.2	1589		
OES 75 - 250			64	83.4	9.6	801	12.8	1068	14.4	1201	16.0	1334	21.5	1793		
OES 75 - 300			76	68.6	11.4	782	15.2	1043	17.1	1173	19.0	1303	25.0	1715		
OES 75 - 350			89	54.9	13.4	736	17.8	977	20.0	1099	21.8	1224	30.4	1669		
OES 75 - 400			102	48.1	15.3	736	20.4	981	23.0	1104	25.5	1187	34.9	1679		
OES 75 - 450			115	41.2	17.3	713	22.0	948	25.9	1066	28.8	1166	42.0	1730		
OES 75 - 500			127	38.2	19.1	730	24.0	970	28.6	1092	31.5	1166	49.1	1635		
OES 75 - 550			140	33.3	21.0	699	26.0	932	31.5	1049	34.2	1074	53.5	1680		
OES 75 - 600			152	31.4	22.8	716	30.4	955	34.2	1074	37.0	1132	61.0	1898		
OES 75 - 1200			4.00 x 3.60		305	16.5	45.8	756	61.0	1007	68.6	1132	76.3	1259	115.0	1898

Code	D _H	D _d	L ₀	R	A		B		C		D		E		
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	15% L ₀	N	20% L ₀	N	225% L ₀	N	25% L ₀	N	approx. do not use	N	
	b x h			± 10%	+ 3,000,000		~ 1,500,000		300 - 500,000		100 - 200,000				
	mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm	N	
OES 100 - 100	25.5	13	25	441.3	3.8	1677	5.0	2207	5.6	2482	6.3	2780	6.7	2957	
OES 100 - 125			32	343.2	4.8	1647	6.4	2196	7.2	2471	8.0	2746	9.5	3260	
OES 100 - 150			38	323.6	5.7	1845	7.6	2459	8.6	2767	9.5	3074	11.8	3818	
OES 100 - 175			44	264.8	6.6	1748	8.8	2330	9.9	2622	11.0	2913	14.1	3734	
OES 100 - 200			51	201.0	7.7	1548	10.2	2050	11.5	2306	12.8	2573	17.0	3417	
OES 100 - 250			64	156.9	9.6	1506	12.8	2008	14.4	2259	16.0	2510	21.0	3295	
OES 100 - 300			76	127.5	11.4	1454	15.2	1938	17.1	2180	19.0	2423	24.9	3175	
OES 100 - 350			89	107.9	13.4	1446	17.8	1921	20.0	2161	22.3	2406	29.9	3226	
OES 100 - 400			102	96.1	15.3	1470	20.4	1960	23.0	2205	25.5	2451	33.9	3258	
OES 100 - 450			115	84.3	17.3	1458	23.0	1939	25.9	2181	28.8	2428	39.1	3296	
OES 100 - 500			127	75.5	19.1	1442	25.4	1918	28.6	2157	31.8	2401	42.2	3186	
OES 100 - 550			140	63.7	21.0	1338	28.0	1784	31.5	2007	35.0	2230	47.7	3038	
OES 100 - 600			152	62.8	22.8	1432	30.4	1909	34.2	2148	38.0	2386	51.1	3209	
OES 100 - 700			178	53.9	26.7	1439	35.6	1919	40.1	2159	44.5	2399	62.1	3347	
OES 100 - 800	203	46.1	30.5	1406	40.6	1872	45.7	2106	50.8	2342	70.0	3227			
OES 100 - 1200	5.50 x 4.70	305	33.3	45.8	1525	61.0	2031	68.6	2285	76.3	2541	105.5	3513		
OES 125 - 150	32	16	38	470.7	5.7	2683	7.6	3577	8.6	4024	9.5	4472	10.2	4801	
OES 125 - 175			44	392.3	6.6	2589	8.8	3452	9.9	3884	11.0	4315	13.0	5100	
OES 125 - 200			51	333.4	7.7	2567	10.2	3401	11.5	3826	12.8	4268	15.3	5101	
OES 125 - 250			64	264.8	9.6	2542	12.8	3389	14.4	3813	16.0	4237	20.4	5402	
OES 125 - 300			76	215.7	11.4	2459	15.2	3279	17.1	3688	19.0	4098	23.2	5004	
OES 125 - 350			89	166.7	13.4	2234	17.8	2967	20.0	3338	22.3	3717	28.3	4718	
OES 125 - 400			102	147.1	15.3	2251	20.4	3001	23.0	3376	25.5	3751	33.4	4913	
OES 125 - 450			115	137.3	17.3	2375	23.0	3158	25.9	3553	28.8	3954	38.6	5300	
OES 125 - 500			127	127.5	19.1	2435	25.4	3239	28.6	3643	31.8	4055	41.3	5266	
OES 125 - 550			140	112.8	21.0	2369	28.0	3158	31.5	3553	35.0	3948	45.0	5076	
OES 125 - 600			152	103.0	22.8	2348	30.4	3131	34.2	3523	38.0	3914	49.9	5140	
OES 125 - 700			178	92.2	26.7	2462	35.6	3282	40.1	3693	44.5	4103	58.1	5357	
OES 125 - 800			203	75.5	34.5	2303	40.6	3065	45.7	3448	50.8	3835	66.0	4983	
OES 125 - 1000			254	60.8	38.1	2316	50.8	3089	57.2	3475	63.5	3861	82.7	5028	
OES 125 - 1200	7.40 x 6.00	305	49.0	45.8	2244	61.0	2989	68.6	3363	6.03	3739	99.5	4876		
OES 150 - 200	38.5	19.5	51	539.4	7.7	4153	10.2	5502	11.5	6190	12.8	6904	13.8	7444	
OES 150 - 250			64	460.9	9.6	4425	12.8	5900	14.4	6637	16.0	7374	19.9	9172	
OES 150 - 300			76	353.0	11.4	4024	15.2	5366	17.1	6036	19.0	6707	22.9	8084	
OES 150 - 350			89	294.2	13.4	3942	17.8	5237	20.0	5891	22.3	6561	28.9	8208	
OES 150 - 400			102	255.0	15.3	3902	20.4	5202	23.0	5852	25.5	6503	31.9	8135	
OES 150 - 450			115	255.6	17.3	3903	23.0	5189	25.9	6614	28.8	6497	36.2	8167	
OES 150 - 500			127	201.0	19.1	3839	25.4	5105	28.6	5744	31.8	6392	41.0	8241	
OES 150 - 550			140	186.3	21.0	3912	28.0	5216	31.5	5868	35.0	6521	45.3	8439	
OES 150 - 600			152	166.7	22.8	3801	30.4	5068	34.2	5701	38.0	6335	50.2	8368	
OES 150 - 700			178	147.1	26.7	3928	35.6	5237	40.1	5891	44.5	6546	57.7	8488	
OES 150 - 800			203	127.5	30.5	3889	40.6	5177	45.7	5824	50.8	6477	68.7	8759	
OES 150 - 1000			254	98.1	38.1	3738	50.8	4983	57.2	5606	63.5	6229	84.3	8270	
OES 150 - 1200			8.50 x 7.50	305	83.4	45.8	3820	61.0	5087	68.6	5723	76.3	6363	105.3	8782
OES 200 - 250			51	25.5	64	645.3	9.6	6195	12.8	8260	14.4	9292	16.0	10325	16.5
OES 200 - 300	76	554.1			11.4	6317	15.2	8422	17.1	9475	19.0	10528	20.9	11581	
OES 200 - 350	89	451.1			13.4	6045	17.8	8030	20.0	9033	22.3	10060	23.9	10781	
OES 200 - 400	102	402.1			15.3	6152	20.4	8203	23.0	9228	25.5	10254	29.3	11782	
OES 200 - 450	115	343.2			17.3	5937	23.0	7894	25.9	8880	28.8	9884	32.3	11085	
OES 200 - 500	127	313.8			19.1	5994	25.4	7971	28.6	8967	31.8	9979	36.7	11516	
OES 200 - 550	140	284.4			21.0	5972	28.0	7963	31.5	8959	35.0	9954	40.7	11575	
OES 200 - 600	152	264.8			22.8	6037	30.4	8050	34.2	9056	38.0	10062	44.1	11678	
OES 200 - 700	178	225.6			26.7	6024	35.6	8031	40.1	9035	44.8	10039	51.6	11641	
OES 200 - 800	203	193.7			30.5	5908	40.6	7864	45.7	8847	50.8	9840	57.6	11157	
OES 200 - 1000	254	153.0			38.1	5829	50.8	7772	57.2	8744	63.5	9716	73.3	11215	
OES 200 - 1200	11.40 x 9.30	305			146.1	45.8	6691	61.0	8912	68.6	10026	76.3	11147	89.2	13032

OES
Metric

EN Besides the production of standard springs, Special Springs is able to design and produce springs NON-STANDARD and customized springs per customer design, both with round and shaped wires.

ES Además de la producción de muelles estándar, Special Springs puede fabricar muelles NO ESTANDAR y ESPECIALES según plano del cliente, sea con hilo redondo o de forma



EN Large compression springs, compression springs with stems terminals, spiral springs for conveyors, and any other type of special "spring" makes Special Springs the "Special" partner for your special needs.

ES Muelles de compresión de grandes dimensiones, muelles de torsión, muelles abiertos para transportadores y cualquier otro tipo de muelle "especial" hacen de Special Springs el socio "Especial" para exigencias especiales.

EN 40 years of expertise and know-how with cold wire profiling along with the in-house heat treatment, allow Special Springs to manufacture springs with special dimensions and wire profiles, also with minimum quantity, and always assuring short delivery and very competitive prices.

ES 40 años de experiencia y know-how en el perfilado en frío de hilos con sección no redonda con tratamiento térmico interno, permiten a Special Springs producir muelles con dimensiones y secciones de hilo especiales, incluso para cantidades pequeñas, con plazo y precio muy competitivos.



EN All Special Springs' products in this catalog can be provided UNPAINTED for meeting special needs and applications. The technical data of the UNPAINTED springs are the same as the standard springs including the standard quantity per pack. The UNPAINTED springs are always supplied with rust preventive oil.

ES Todos los muelles incluidos en el presente catálogo de Special Springs pueden ser suministrados también SIN PINTAR para satisfacer exigencias y aplicaciones especiales. Los datos técnicos de los muelles SIN PINTAR son los mismos que los estándar, incluidas las cantidades por bolsa. Los muelles SIN PINTAR se suministran siempre con aceite protector antioxidación.



EN The delivery time for UNPAINTED springs may differ from that of standard springs. Always contact your Special Springs customer service for detailed information. For UNPAINTED springs orders, please clearly specify on the order the note "UNPAINTED". Please remember that UNPAINTED springs can rust more easily and this can be a reason for possible early failure. Therefore, it is recommended to check the conditions of the springs periodically.

ES Los plazos de los muelles SIN PINTAR pueden diferir de aquellos de los muelles estándar. Contactar siempre con el servicio de atención al cliente de Special Springs para información más precisa. En pedidos de muelles SIN PINTAR es necesario remarcar en el pedido, de modo claro, "SIN PINTAR". Se recuerda que los muelles SIN PINTAR son más propensos a oxidarse, siendo la oxidación causa de roturas prematuras. Se recomienda verificar periódicamente el estado de los muelles.





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