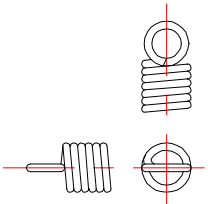
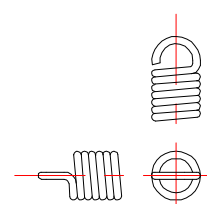
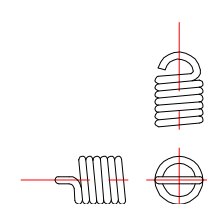
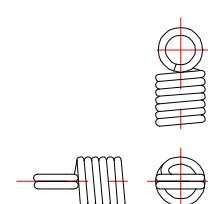
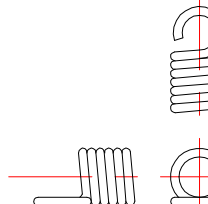
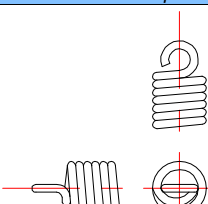
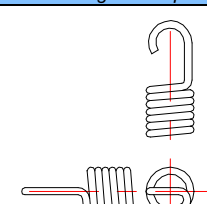
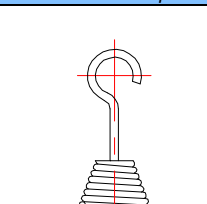
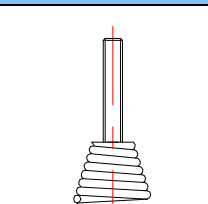
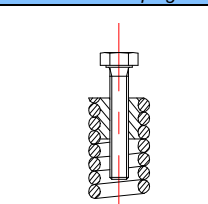


**FORMULES**  
**CIRCULATION FORMULAS**

<b>d</b>	Diamètre du fil <i>Wire diameter</i>	mm		<b>n</b>	Nombre de spires utiles <i>Effective turns</i>		$n = \frac{fGd^4}{8D_m^3 P}$
<b>De</b>	Diamètre extérieur <i>Outside diameter</i>	mm		<b>L</b>	Longueur du corps du ressort <i>Body length</i>	mm	$l = (n + 1)d$
<b>Dm</b>	Diamètre moyen servant au calcul du ressort <i>Mean diameter used to calculate the spring</i>	mm	$D_m = \frac{D_e + D_i}{2} = D_e - d = D_i + d$				
<b>f</b>	Flèche <i>Deflection</i>	mm	$f = \frac{8D_m^3 n P}{Gd^4}$	<b>τ</b>	Taux de travail pour un effort P <i>Calculation of the stress under load</i>	N/mm <sup>2</sup>	$\tau = \frac{8PD_m}{\pi d^3}$
<b>P</b>	Charge pour la flèche f <i>Load for deflection</i>	N	$P = kf + T_i$ et $f_{max} = (P_{max} - T_i) / k$	<b>τ<sub>i</sub></b>	Taux de travail pour la tension initiale <i>Calculation of the stress under initial tension</i>	N/mm <sup>2</sup>	$\tau_i = \frac{8T_i D_m}{\pi d^3}$
<b>T<sub>i</sub></b>	Tension initiale <i>Initial tension</i>	N		<b>G</b>	Module d'élasticité à la torsion (module de Coulomb ou de glissement) <i>Torsional elasticity modulus (Coulomb modulus or slip modulus)</i>	N/mm <sup>2</sup>	
<b>k</b>	Raideur du ressort <i>Spring rate</i>	N/mm <sup>2</sup>	$k = \frac{P - T_i}{f} = \frac{Gd^4}{8D_m^3 n}$				
<p><b>Nota :</b> La flexibilité correspond à l'inverse de la raideur. <b>Note :</b> Flexibility is the inverse of rigidity</p>							

**DIFFERENTS TYPES D'EXTREMITES**

**DIFFERENT TYPES OF ENDS**

Anneau anglais <i>Full centered loop</i>	Anneau allemand <i>Full twisted loop</i>	Demi-anneau <i>Half loop</i>	Anneau double <i>Double loop</i>	Anneau sur le côté <i>Loop on the side</i>
				
Anneau rétréci <i>Reduced loop</i>	Crochet allongé <i>Elongated loop</i>	Anneau mobile <i>Mobile loop</i>	Tige filetée mobile <i>Mobile threaded rod</i>	Bouchon taraudé <i>Threaded plug</i>
				

**LES EQUIVALENCES DANS LES UNITES DE MESURE**

**THE EQUIVALENCES UNITS**

1 millimètre.....0,03937 inch	1 inch.....25,3999 millimètres	1 hectogramme ..... 3,527 onces	1 once.....28,34953 grammes
1 centimètre.....0,39370 inch	1 foot .....12 inches : 0,30480 millimètre	1 kilogramme.....2,2046223 pounds	1 pound.....0,453592243 kilogramme
1 décimètre .....3,93701 inches	1 yard.....3 feet : 0,914399 mètre	1 tonne .....0,98420 ton	1 ton.....1,01604 tonne
1 mètre.....1,09361 yard		1 kilogramme.....0,981 daN	1 daN.....1,02 kilogramme
		1 kilogramme.....9,81 N	1 N.....0,102 kilogramme