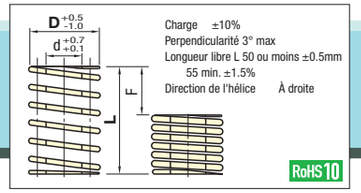
Ressort hélicoïdal

Pour déformation élevée SWR



D	d	L	N/mm {kgf/mm} (constante du ressort)	F=Lx50% Fmm	F=Lx50% Charge N{kgf}	Référence pièce Type D-L	Prix unitaire
10.5	6.0	15	10.46{1.07}	7.5	78.5 {8.0}	SWR10.5- 15	
		20	7.85{0.80}	10.0		20	
		25	6.28{0.64}	12.5		25	
		30	5.23{0.53}	15.0		30	
		35	4.48{0.46}	17.5		35	
		40	3.92{0.40}	20.0		40	
		45	3.49{0.36}	22.5		45	
		50	3.14{0.32}	25.0		50	
		55	2.85{0.29}	27.5		55	
		60	2.62{0.27}	30.0		60	
		65	2.41{0.25}	32.5		65	
		70	2.24{0.23}	35.0		70	
		75	2.09{0.21}	37.5		75	
		80	1.96{0.20}	40.0		80	
12.5	7.0	15	11.77{1.20}	7.5	88.3 {9.0}	SWR12.5- 15	
		20	8.83{0.90}	10.0		20	
		25	7.06{0.72}	12.5		25	
		30	5.88{0.60}	15.0		30	
		35	5.04{0.51}	17.5		35	
		40	4.41{0.45}	20.0		40	
		45	3.92{0.40}	22.5		45	
		50	3.53{0.36}	25.0		50	
		55	3.21{0.33}	27.5		55	
		60	2.94{0.30}	30.0		60	
		65	2.72{0.28}	32.5		65	
		70	2.52{0.26}	35.0		70	
		75	2.35{0.24}	37.5		75	
		80	2.21{0.23}	40.0		80	
		90	1.96{0.20}	45.0		90	
		100	1.77{0.18}	50.0		100	
14.5	8.5	15	17.00{1.73}	7.5	127.5 {13.0}	SWR14.5- 15	
		20	12.75{1.30}	10.0		20	
		25	10.20{1.04}	12.5		25	
		30	8.50{0.87}	15.0		30	
		35	7.28{0.74}	17.5		35	
		40	6.37{0.65}	20.0		40	
		45	5.67{0.58}	22.5		45	
		50	5.10{0.52}	25.0		50	
		55	4.64{0.47}	27.5		55	
		60	4.25{0.43}	30.0		60	
		65	3.92{0.40}	32.5		65	
		70	3.64{0.37}	35.0		70	
		75	3.40{0.35}	37.5		75	
		80	3.19{0.33}	40.0		80	
		90	2.83{0.29}	45.0		90	
		100	2.55{0.26}	50.0		100	
		125	2.04{0.21}	62.5		125	
		150	1.70{0.17}	75.0		150	
17	10.5	20	19.61{2.00}	10.0	196.1 {20.0}	SWR17- 20	
		25	15.69{1.60}	12.5		25	
		30	13.08{1.33}	15.0		30	
		35	11.21{1.14}	17.5		35	
		40	9.81{1.00}	20.0		40	
		45	8.72{0.89}	22.5		45	
		50	7.85{0.80}	25.0		50	
		55	7.13{0.73}	27.5		55	
		60	6.54{0.67}	30.0		60	
		65	6.03{0.62}	32.5		65	
		70	5.60{0.57}	35.0		70	
		75	5.23{0.53}	37.5		75	
		80	4.90{0.50}	40.0		80	
		90	4.36{0.44}	45.0		90	
		100	3.92{0.40}	50.0		100	
		125	3.14{0.32}	62.5		125	
		150	2.62{0.27}	75.0		150	
		175	2.24{0.23}	87.5		175	

Ordering Example — Référence pièce: SWR37-40

D	d	L	N/mm {kgf/mm} (constante du ressort)	F=Lx50% Fmm	F=Lx50% Charge N{kgf}	Référence pièce Type D-L	Prix unitaire
21	13.5	25	23.54{2.40}	12.5	294.2 {30.0}	SWR21- 25	
		30	19.61{2.00}	15.0		30	
		35	16.81{1.71}	17.5		35	
		40	14.71{1.50}	20.0		40	
		45	13.08{1.33}	22.5		45	
		50	11.77{1.20}	25.0		50	
		55	10.07{1.09}	27.5		55	
		60	9.81{1.00}	30.0		60	
		65	9.05{0.92}	32.5		65	
		70	8.41{0.86}	35.0		70	
		75	7.85{0.80}	37.5		75	
		80	7.35{0.75}	40.0		80	
		90	6.54{0.67}	45.0		90	
		100	5.88{0.60}	50.0		100	
		110	5.35{0.55}	55.0		110	
		120	4.90{0.50}	60.0		120	
		125	4.71{0.48}	62.5		125	
		130	4.53{0.46}	65.0		130	
		140	4.20{0.43}	70.0		140	
		150	3.92{0.40}	75.0		150	
		175	3.36{0.34}	87.5		175	
		200	2.94{0.30}	100.0		200	
26	16.5	25	31.38{3.20}	12.5	392.3 {40.0}	SWR26- 25	
		30	26.15{2.67}	15.0		30	
		35	22.42{2.29}	17.5		35	
		40	19.61{2.00}	20.0		40	
		45	17.43{1.78}	22.5		45	
		50	15.69{1.60}	25.0		50	
		55	14.26{1.45}	27.5		55	
		60	13.08{1.33}	30.0		60	
		65	12.07{1.23}	32.5		65	
		70	11.21{1.14}	35.0		70	
		75	10.46{1.07}	37.5		75	
		80	9.81{1.00}	40.0		80	
		90	8.72{0.89}	45.0		90	
		100	7.85{0.80}	50.0		100	
		110	7.13{0.73}	55.0		110	
		120	6.54{0.67}	60.0		120	
		125	6.28{0.64}	62.5		125	
		130	6.03{0.62}	65.0		130	
		140	5.60{0.57}	70.0		140	
		150	5.23{0.53}	75.0		150	
		175	4.48{0.46}	87.5		175	
		200	3.92{0.40}	100.0		200	
		225	3.49{0.36}	112.5		225	
		250	3.14{0.32}	125.0		250	
31	21	35	28.02{2.86}	17.5	490.3 {50.0}	SWR31- 35	
		40	24.52{2.50}	20.0		40	
		45	21.79{2.22}	22.5		45	
		50	19.61{2.00}	25.0		50	
		55	17.83{1.82}	27.5		55	
		60	16.34{1.67}	30.0		60	
		65	15.09{1.54}	32.5		65	
		70	14.01{1.43}	35.0		70	
		75	13.08{1.33}	37.5		75	
		80	12.26{1.25}	40.0		80	
		90	10.90{1.11}	45.0		90	
		100	9.81{1.00}	50.0		100	
		110	8.92{0.91}	55.0		110	
		120	8.17{0.83}	60.0		120	
		125	7.85{0.80}	62.5		125	
		130	7.54{0.77}	66.0		130	
		140	7.00{0.71}	70.0		140	
		150	6.54{0.67}	75.0		150	
		160	6.13{0.63}	80.0		160	
		170	5.77{0.59}	85.0		170	
		175	5.60{0.57}	87.5		175	
		180	5.45{0.56}	90.0		180	
		190	5.16{0.53}	95.0		190	
		200	4.90{0.50}	100.0		200	
		250	3.92{0.40}	125.0		250	
		300	3.27{0.33}	150.0		300	

Matériau : Fils pour ressorts trempés à l'huile

- Méthode de calcul de la charge = Constante du ressort x Déformation
  (Unités SI) N = N/mmxFmm
  kgf=kgf/mmxFmm
  (kgf=Nx0.101972)

Nombre d'utilisations : 1 million (Lx55 : 300 000)

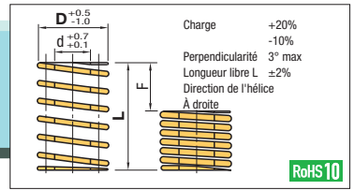
Utilisation des ressorts hélicoïdaux et précautions d'usage P.328

À propos de la dimension D et de l'orifice arrière, et de la dimension D et de l'arbre, voir P.1881.

D	d	L	N/mm {kgf/mm} (constante du ressort)	F=Lx50% Fmm	F=Lx50% Charge N{kgf}	Référence pièce Type D-L	Prix unitaire
37	26	35	33.62{3.43}	17.5	588.4 {60.0}	SWR37- 35	
		40	29.42{3.00}	20.0		40	
		45	26.15{2.67}	22.5		45	
		50	23.54{2.40}	25.0		50	
		55	21.40{2.18}	27.5		55	
		60	19.61{2.00}	30.0		60	
		65	18.10{1.85}	32.5		65	
		70	16.81{1.71}	35.0		70	
		75	15.69{1.60}	37.5		75	
		80	14.71{1.50}	40.0		80	
		90	13.08{1.33}	45.0		90	
		100	11.77{1.20}	50.0		100	
		110	10.70{1.09}	55.0		110	
		120	9.81{1.00}	60.0		120	
		125	9.41{0.96}	62.5		125	
		130	9.05{0.92}	65.0		130	
		140	8.41{0.86}	70.0		140	
		150	7.85{0.80}	75.0		150	
		160	7.35{0.75}	80.0		160	
		170	6.92{0.71}	85.0		170	
		175	6.72{0.69}	87.5		175	
		180	6.54{0.67}	90.0		180	
		190	6.19{0.63}	95.0		190	
		200	5.88{0.60}	100.0		200	
		250	4.71{0.48}	125.0		250	
		300	3.92{0.40}	150.0		300	
43	31	50	33.34{3.40}	25.0	833.6 {85.0}	SWR43- 50	
		60	27.79{2.83}	30.0		60	
		70	23.82{2.43}	35.0		70	
		80	20.84{2.13}	40.0		80	
		90	18.52{1.89}	45.0		90	
		100	16.67{1.70}	50.0		100	
		110	15.16{1.55}	55.0		110	
		120	13.89{1.42}	60.0		120	
		130	12.82{1.31}	65.0		130	
		140	11.91{1.21}	70.0		140	
		150	11.11{1.13}	75.0		150	
		160	10.42{1.06}	80.0		160	
		170	9.81{1.00}	85.0		170	
		180	9.26{0.94}	90.0		180	
		190	8.77{0.89}	95.0		190	
		200	8.34{0.85}	100.0		200	
		225	7.41{0.76}	112.5		225	
		250	6.67{0.68}	125.0		250	
		275	6.06{0.62}	137.5		275	
		300	5.56{0.57}	150.0		300	
46	33	50	43.15{4.40}	25.0	1079 {110.0}	SWR46- 50	
		60	35.96{3.67}	30.0		60	
		70	30.82{3.14}	35.0		70	
		80	26.97{2.75}	40.0		80	
		90	23.97{2.44}	45.0		90	
		100	21.57{2.20}	50.0		100	
		110	19.61{2.00}	55.0		110	
		120	17.98{1.83}	60.0		120	
		125	17.26{1.76}	62.5		125	
		130	16.60{1.69}	65.0		130	
		140	15.41{1.57}	70.0		140	
		150	14.38{1.47}	75.0		150	
		175	12.33{1.26}	87.5		175	
		200	10.79{1.10}	100.0		200	
		225	9.59{0.98}	112.5		225	
		250	8.63{0.88}	125.0		250	
		275	7.85{0.80}	137.5		275	
		300	7.19{0.73}	150.0		300	
50	36	50	52.96{5.40}	25.0	1324 {135.0}	SWR50- 50	
		60	44.13{4.50}	30.0		60	
		70	37.83{3.86}	35.0		70	
		80	33.10{3.38}	40.0		80	
		90	29.42{3.00}	45.0		90	
		100	26.48{2.70}	50.0		100	
		110	24.07{2.45}	55.0		110	
		120	22.06{2.25}	60.0		120	
		130	20.37{2.08}	65.0		130	
		140	18.91{1.93}	70.0		140	
		150	17.65{1.80}	75.0		150	
		175	15.13{1.54}	87.5		175	
		200	13.24{1.35}	100.0		200	
		225	11.77{1.20}	112.5		225	
		250	10.59{1.08}	125.0		250	
		275	9.63{0.98}	137.5		275	
		300	8.83{0.90}	150.0		300	
		350	7.57{0.77}	175.0		350	
		400	6.62{0.68}	200.0		400	

Ressort hélicoïdal

Pour déformation moyenne SWS



D	d	L	N/mm {kgf/mm} (constante du ressort)	F=Lx40% Fmm	F=Lx40% Charge N{kgf}	Référence pièce Type D-L	Prix unitaire
10.5	5.5	20	10.90{1.11}	8.0	87.2 (8.9)	SWS10.5- 20	
		25	8.72{0.89}	10.0		25	
		30	7.27{0.74}	12.0		30	
		35	6.23{0.64}	14.0		35	
		40	5.45{0.56}	16.0		40	
		45	4.84{0.49}	18.0		45	
		50	4.36{0.44}	20.0		50	
		55	3.96{0.40}	22.0		55	
		60	3.63{0.37}	24.0		60	
		65	3.35{0.34}	26.0		65	
		70	3.11{0.32}	28.0		70	
		75	2.91{0.30}	30.0		75	
		80	2.73{0.28}	32.0		80	
12.5	6.5	20	15.25{1.56}	8.0	122.0 (12.4)	SWS12.5- 20	
		25	12.20{1.24}	10.0		25	
		30	10.17{1.04}	12.0		30	
		35	8.71{0.89}	14.0		35	
		40	7.63{0.78}	16.0		40	
		45	6.78{0.69}	18.0		45	
		50	6.10{0.62}	20.0		50	
		55	5.55{0.57}	22.0		55	
		60	5.08{0.52}	24.0		60	
		65	4.69{0.48}	26.0		65	
		70	4.36{0.44}	28.0		70	
		75	4.07{0.41}	30.0		75	
		80	3.81{0.39}	32.0		80	
14.5	8.5	20	24.50{2.50}	8.0	196.0 (20.0)	SWS14.5- 20	
		25	19.61{2.00}	10.0		25	
		30	16.33{1.67}	12.0		30	
		35	14.00{1.43}	14.0		35	
		40	12.25{1.25}	16.0		40	
		45	10.89{1.11}	18.0		45	
		50	9.80{1.00}	20.0		50	
		55	8.91{0.91}	22.0		55	
		60	8.17{0.83}	24.0		60	
		65	7.54{0.77}	26.0		65	
		70	7.00{0.71}	28.0		70	
		75	6.53{0.67}	30.0		75	
		80	6.13{0.62}	32.0		80	
		90	5.44{0.56}	36.0		90	
		100	4.90{0.50}	40.0		100	
		125	3.92{0.40}	50.0		125	
		150	3.27{0.33}	60.0		150	
17	10.5	25	29.42{3.00}	10.0	294.2 (30.0)	SWS 17- 25	
		30	24.52{2.50}	12.0		30	
		35	21.01{2.14}	14.0		35	
		40	18.39{1.88}	16.0		40	
		45	16.34{1.67}	18.0		45	
		50	14.71{1.50}	20.0		50	
		55	13.37{1.36}	22.0		55	
		60	12.26{1.25}	24.0		60	
		65	11.32{1.15}	26.0		65	
		70	10.51{1.07}	28.0		70	
		75	9.81{1.00}	30.0		75	
		80	9.19{0.94}	32.0		80	
		90	8.17{0.83}	36.0		90	
		100	7.35{0.75}	40.0		100	
		125	5.88{0.60}	50.0		125	
		150	4.90{0.50}	60.0		150	

Ordering Example — Référence pièce: SWS21-100

D	d	L	N/mm {kgf/mm} (constante du ressort)	F=Lx40% Fmm	F=Lx40% Charge N{kgf}	Référence pièce Type D-L	Prix unitaire
21	13.5	30	35.17{3.59}	12.0	422.0 (43.0)	SWS21- 30	
		35	30.14{3.07}	14.0		35	
		40	26.38{2.69}	16.0		40	
		45	23.44{2.39}	18.0		45	
		50	21.10{2.15}	20.0		50	
		55	19.18{1.96}	22.0		55	
		60	17.58{1.79}	24.0		60	
		65	16.23{1.66}	26.0		65	
		70	15.07{1.54}	28.0		70	
		75	14.07{1.43}	30.0		75	
		80	13.19{1.34}	32.0		80	
		90	11.72{1.20}	36.0		90	
		100	10.55{1.08}	40.0		100	
		110	9.59{0.98}	44.0		110	
		120	8.79{0.90}	48.0		120	
		125	8.44{0.86}	50.0		125	
		130	8.12{0.83}	52.0		130	
		140	7.54{0.77}	56.0		140	
		150	7.03{0.72}	60.0		150	
		175	6.03{0.61}	70.0		175	
		200	5.28{0.54}	80.0		200	
26	16.5	30	47.42{4.84}	12.0	569.0 (58.0)	SWS26- 30	
		35	40.64{4.14}	14.0		35	
		40	35.56{3.63}	16.0		40	
		45	31.61{3.22}	18.0		45	
		50	28.45{2.90}	20.0		50	
		55	25.86{2.64}	22.0		55	
		60	23.71{2.42}	24.0		60	
		65	21.88{2.23}	26.0		65	
		70	20.32{2.07}	28.0		70	
		75	18.97{1.93}	30.0		75	
		80	17.78{1.81}	32.0		80	
		90	15.81{1.61}	36.0		90	
		100	14.23{1.45}	40.0		100	
		110	12.93{1.32}	44.0		110	
		120	11.85{1.21}	48.0		120	
		125	11.38{1.16}	50.0		125	
		130	10.94{1.12}	52.0		130	
		140	10.16{1.04}	56.0		140	
		150	9.48{0.97}	60.0		150	
		175	8.13{0.83}	70.0		175	
		200	7.11{0.73}	80.0		200	
		225	6.32{0.64}	90.0		225	
		250	5.69{0.58}	100.0		250	
31	21	40	49.00{5.00}	16.0	784.0 (79.9)	SWS31- 40	
		45	43.56{4.44}	18.0		45	
		50	39.20{4.00}	20.0		50	
		55	35.65{3.64}	22.0		55	
		60	32.67{3.33}	24.0		60	
		65	30.15{3.07}	26.0		65	
		70	28.00{2.86}	28.0		70	
		75	26.13{2.66}	30.0		75	
		80	24.50{2.50}	32.0		80	
		90	21.78{2.22}	36.0		90	
		100	19.60{2.00}	40.0		100	
		110	17.82{1.82}	44.0		110	
		120	16.33{1.67}	48.0		120	
		125	15.68{1.60}	50.0		125	
		130	15.08{1.54}	52.0		130	
		140	14.00{1.43}	56.0		140	
		150	13.07{1.33}	60.0		150	
		160	12.25{1.25}	64.0		160	
		170	11.53{1.18}	68.0		170	
		175	11.20{1.14}	70.0		175	
		180	10.89{1.11}	72.0		180	
		190	10.32{1.05}	76.0		190	
		200	9.80{1.00}	80.0		200	
		250	7.84{0.80}	100.0		250	
		300	6.53{0.67}	120.0		300	

Matériau : Fils pour ressorts trempés à l'huile

- Méthode de calcul de la charge = Constante du ressort x Déformation
  (Unités SI) N = N/mmxFmm
  kgf=kgf/mmxFmm
  (kgf=Nx0.101972)

Nombre d'utilisations : 1 millions (Lx45% : 300 000)

Utilisation des ressorts hélicoïdaux et précautions d'usage P.328

À propos de la dimension D et de l'orifice arrière, et de la dimension D et de l'arbre, voir P.1881.

D	d	L	N/mm {kgf/mm} (constante du ressort)	F=Lx40% Fmm	F=Lx40% Charge N{kgf}	Référence pièce Type D-L	Prix unitaire
37	26	40	52.13{5.32}	16.0	834.0 (85.0)	SWS 37- 40	
		45	46.33{4.72}	18.0		45	
		50	41.70{4.25}	20.0		50	
		55	37.91{3.87}	22.0		55	
		60	34.75{3.54}	24.0		60	
		65	32.08{3.27}	26.0		65	
		70	29.79{3.04}	28.0		70	
		75	27.80{2.83}	30.0		75	
		80	26.06{2.66}	32.0		80	
		90	23.17{2.36}	36.0		90	
		100	20.85{2.13}	40.0		100	
		110	18.95{1.93}	44.0		110	
		120	17.38{1.77}	48.0		120	
		125	16.68{1.70}	50.0		125	
		130	16.04{1.64}	52.0		130	
		140	14.89{1.52}	56.0		140	
		150	13.90{1.42}	60.0		150	
		160	13.03{1.33}	64.0		160	
		170	12.26{1.25}	68.0		170	
		175	11.91{1.21}	70.0		175	
		180	11.58{1.18}	72.0		180	
		190	10.97{1.12}	76.0		190	
		200	10.43{1.06}	80.0		200	
		250	8.34{0.85}	100.0		250	
		300	6.95{0.71}	120.0		300	
44.5	31	50	50.15{5.11}	20.0	1003 (102.3)	SWS44.5- 50	
		60	41.79{4.26}	24.0		60	
		70	35.82{3.65}	28.0		70	
		80	31.34{3.20}	32.0		80	
		90	27.86{2.84}	36.0		90	
		100	25.08{2.56}	40.0		100	
		110	22.80{2.32}	44.0		110	
		120	20.90{2.13}	48.0		120	
		130	19.29{1.97}	52.0		130	
		140	17.91{1.83}	56.0		140	
		150	16.72{1.60}	60.0		150	
		160	15.67{1.60}	64.0		160	
		170	14.75{1.50}	68.0		170	
		180	13.93{1.42}	72.0		180	
		190	13.20{1.35}	76.0		190	
		200	12.54{1.28}	80.0		200	
		225	11.14{1.14}	90.0		225	
		250	10.03{1.02}	100.0		250	
		275	9.12{0.93}	110.0		275	
		300	8.36{0.85}	120.0		300	
46	33	50	63.74{6.50}	20.0	1275 (130)	SWS 46- 50	
		60	53.12{5.42}	24.0		60	
		70	45.53{4.64}	28.0		70	
		80	39.84{4.06}	32.0		80	
		90	35.41{3.61}	36.0		90	
		100	31.87{3.25}	40.0		100	
		110	28.97{2.95}	44.0		110	
		120	26.56{2.71}	48.0		120	
		125	25.50{2.60}	50.0		125	
		130	24.52{2.50}	52.0		130	
		140	22.77{2.32}	56.0		140	
		150	21.25{2.17}	60.0		150	
		175	18.21{1.86}	70.0		175	
		200	15.94{1.63}	80.0		200	
		225	14.17{1.44}	90.0		225	
		250	12.75{1.30}	100.0		250	
		275	11.59{1.18}	110.0		275	
		300	10.62{1.08}	120.0		300	
52	37	60	65.42{6.67}	24.0	1570 (160)	SWS 52- 60	
		70	56.07{5.72}	28.0		70	
		80	49.06{5.00}	32.0		80	
		90	43.61{4.45}	36.0		90	
		100	39.25{4.00}	40.0		100	
		110	35.68{3.64}	44.0		110	
		120	32.71{3.34}	48.0		120	
		130	30.19{3.08}	52.0		130	
		140	28.04{2.86}	56.0		140	
		150	26.17{2.67}	60.0		150	
		175	22.43{2.29}	70.0		175	
		200	19.63{2.00}	80.0		200	
		225	17.44{1.78}	90.0		225	
		250	15.70{1.60}	100.0		250	
		275	14.27{1.46}	110.0		275	
		300	13.08{1.33}	120.0		300	