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**Tools for pressing — Compression  
springs with rectangular section —  
Housing dimensions and colour coding**

*Outillage de presse — Ressorts de compression à section  
rectangulaire — Dimensions d'encombrement et code de couleur*

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ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10243 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This second edition cancels and replaces the first edition (ISO 10243:1991), which has been technically revised.

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# Tools for pressing — Compression springs with rectangular section — Housing dimensions and colour coding

## 1 Scope

This International Standard establishes the technical specifications for compression springs made from rectangular wires.

The parameters set in this International Standard are applicable to springs which are set. This International Standard does not attempt to specify the quality of the springs themselves, nor all of their dimensions (e.g. cross-section), their material or their length of life.

The springs are classified into spring rates: light, medium, strong and extra strong. For each spring rate, this International Standard gives a colour code.

## 2 Technical specifications

### 2.1 General

Compression springs in accordance with this International Standard shall comply with the technical specifications given in Figure 1 and in 2.2 to 2.6.

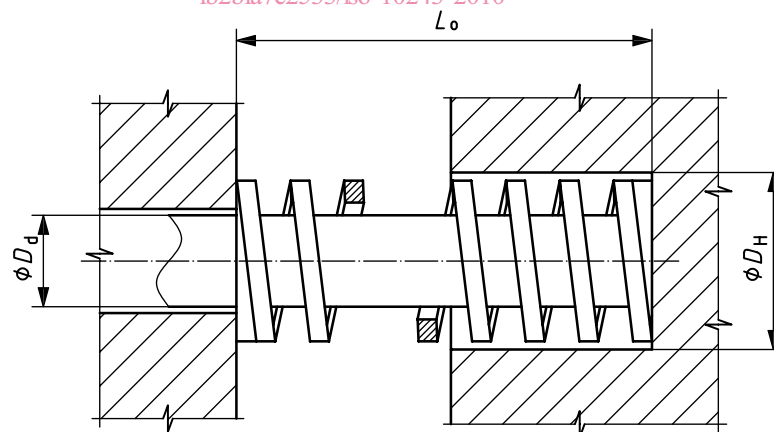


Figure 1 — Compression springs

### 2.2 Tolerances for free length, $L_0$

The tolerances for free length,  $L_0$ , shall comply with the indications of Figure 1 and Table 1.

**Table 1 — Tolerances of free length**

$L_o$ mm	Tolerance
25	±1 mm
32	
38	
44	
51	
64	
76	
89	
102	±1 %
115	
127	
139	
152	
178	
203	
254	
305	

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### 2.3 Light spring rate

Compression springs of light spring rate in accordance with this International Standard shall comply with the technical specifications given in Figure 1 and Table 2.

Compression springs of light spring rate shall be green according to the colour code of this International Standard.

**Table 2 — Technical specifications of compression springs of light spring rate**

Hole diameter $D_H$ H15 mm	Rod diameter $D_d$ h15 mm	Free length $L_o$ mm	Required force to deflect 1 mm  ±10 % N	Maximum operating deflection  40 % $L_o$ mm
10	5	25	10	10,0
		32	8,5	12,8
		38	6,8	15,2
		44	6	17,6
		51	5	20,4
		64	4,3	25,6
		76	3,2	30,4
		305	1,1	122
12,5	6,3	25	17,9	10,0
		32	16,4	12,8
		38	13,6	15,2
		44	12,1	17,6
		51	11,4	20,4
		64	9,3	25,6
		76	7,1	30,4
		305	1,4	122
16	8	25	23,4	10,0
		32	22,9	12,8
		38	19,3	15,2
		44	17,1	17,6
		51	15,7	20,4
		64	10,7	25,6
		76	10	30,4
		89	8,6	35,6
		102	7,8	40,8
		305	2,5	122

Table 2 (continued)

Hole diameter $D_H$ H15 mm	Rod diameter $D_d$ h15 mm	Free length $L_o$ mm	Required force to deflect 1 mm $\pm 10\%$ N	Maximum operating deflection $40\% L_o$ mm
20	10	25	55,8	10,0
		32	45	12,8
		38	33,3	15,2
		44	30	17,6
		51	24,5	20,4
		64	20	25,6
		76	16	30,4
		89	14	35,6
		102	12	40,8
		115	10,9	46,0
		127	9,5	50,8
		139	8,4	55,6
		152	7,5	60,8
25	12,5	305	4	122
		100	100	10,0
		32	80,3	12,8
		38	62	15,2
		44	52,9	17,6
		51	44	20,4
		64	35,2	25,6
		76	28	30,4
		89	24	35,6
		102	21,1	40,8
		115	18,7	46,0
		127	16,7	50,8
		139	15,3	55,6
152	14	60,8		
178	12,5	71,2		
203	10,4	81,2		
305	7	122		



Table 2 (continued)

Hole diameter $D_H$ H15 mm	Rod diameter $D_d$ h15 mm	Free length $L_o$ mm	Required force to deflect 1 mm $\pm 10\%$ N	Maximum operating deflection $40\% L_o$ mm
32	16	38	94	15,2
		44	79,5	17,6
		51	67	20,4
		64	53	25,6
		76	44	30,4
		89	37,2	35,6
		102	32	40,8
		115	29	46,0
		127	25	50,8
		139	23	55,6
		152	21,5	60,8
		178	18,2	71,2
		203	15,8	81,2
		254	12,5	102
40	20	305	10,3	122
		51	92	20,4
		64	73	25,6
		76	63	30,4
		89	51	35,6
		102	43	40,8
		115	39,6	46,0
		127	37	50,8
		139	32	55,6
		152	28	60,8
		178	25,2	71,2
		203	22,7	81,2
		254	17	102
		305	14,8	122

Table 2 (continued)

Hole diameter $D_H$ H15 mm	Rod diameter $D_d$ h15 mm	Free length $L_o$ mm	Required force to deflect 1 mm $\pm 10\%$ N	Maximum operating deflection $40\% L_o$ mm
50	25	64	156	25,6
		76	125	30,4
		89	109	35,6
		102	94	40,8
		115	81	46,0
		127	71	50,8
		139	66,5	55,6
		152	60	60,8
		178	52	71,2
		203	44	81,2
		254	35	102
63	38	305	28,5	122
		76	189	30,4
		89	158	35,6
		102	131	40,8
		115	116	46,0
		127	103	50,8
		152	84,3	60,8
		178	71,5	71,2
		203	61,7	81,2
254	47	102		
		305	38,2	122

## 2.4 Medium spring rate

Compression springs of medium spring rate in accordance with this International Standard shall comply with the technical specifications given in Figure 1 and Table 3.

Compression springs of medium spring rate shall be blue according to the colour code of this International Standard.

**Table 3 — Technical specifications of compression springs of medium spring rate**

Hole diameter $D_H$ H15 mm	Rod diameter $D_d$ h15 mm	Free length $L_o$ mm	Required force to deflect 1 mm $\pm 10\%$ N	Maximum operating deflection $37,5\% L_o$ mm
10	5	25	16	9,4
		32	13	12,0
		38	11,9	14,2
		44	10,3	16,5
		51	8,9	19,1
		64	7,5	24,0
		76	5,3	28,5
		305	1,6	114
12,5	6,3	25	30	9,4
		32	24,8	12,0
		38	21,4	14,2
		44	18,5	16,5
		51	15,5	19,1
		64	12,1	24,0
		76	10,2	28,5
		89	8,4	33,3
305	2,1	114		
16	8	25	49,4	9,4
		32	37,1	12,0
		38	33,9	14,2
		44	30	16,5
		51	26,4	19,1
		64	20,5	24,0
		76	17,8	28,5
		89	15,2	33,3
		102	13,5	38,2
		305	4,8	114