

INTERNATIONAL STANDARD

ISO
10243

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

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

ISO 10243:1991

<https://standards.iteh.ai/catalog/standards/sist/1cdbe18b-4be9-4e4c-b498-315254c7e14b/iso-10243-1991>



Reference number
ISO 10243:1991(E)

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.

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.

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

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

1 Scope

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

The spring parameters apply to springs that are set. It 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 the spring rates: light, medium, strong, and extra strong. For each spring rate this International Standard gives a colour code.

2 Technical specifications

See figure 1 and 2.1 to 2.5.

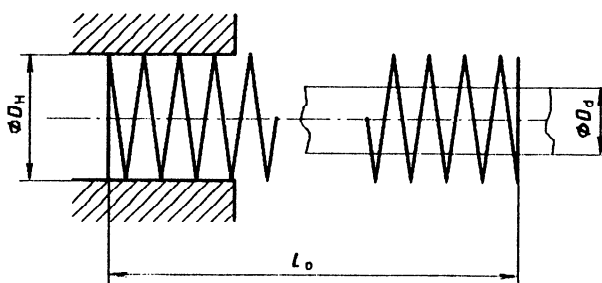


Figure 1

2.1 Tolerances for the free length, L_o

See figure 1 and table 1.

Table 1

L_o mm	Tolerance %
25 32 38 44 51 64	± 3
76 89 102 115	$\pm 2,5$
127 139 152 178 203 254 305	± 2

2.2 Spring rate — light

Colour code: Green

See figure 1 and table 2.

Table 2

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 mm
10	5	25	10	10,3
		32	8,5	13,1
		38	6,8	15,6
		44	6	18
		51	5	20,9
		64	4,3	26
		76	3,2	31,2
12,5	6,3	25	17,9	10,3
		32	16,4	13,1
		38	13,6	15,6
		44	12,1	18
		51	11,4	20,9
		64	9,3	26,3
		76	7,1	31,2
16	8	25	23,4	10,3
		32	22,9	13,1
		38	19,3	15,6
		44	17,1	18
		51	15,7	20,9
		64	10,7	26,3
		76	10	31,2
		89	8,6	36,5
		102	7,8	41,8
		305	2,5	125

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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 mm
20	10	25	55,8	10,2
		32	45	12,5
		38	33,3	15
		44	30	18
		51	24,5	20
		64	20	25
		76	16	30
		89	14	35
		102	12	41
		115	10,9	46
		127	9,5	51
		139	8,4	56
		152	7,5	61
		305	4	122
25	12,5	25	100	10,2
		32	80,3	12,5
		38	62	15
		44	52,9	18
		51	44	20
		64	35,2	25
		76	28	30
		89	24	35
		102	21,1	41
		115	18,7	46
		127	16,7	51
		139	15,3	56
		152	14	61
		178	12,5	71
		203	10,4	81
		305	7	122

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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 mm
32	16	38	94	15
		44	79,5	18
		51	67	20
		64	53	25
		76	44	30
		89	37,2	35
		102	32	41
		115	29	46
		127	25	51
		139	23	56
		152	21,5	61
		178	18,2	71
		203	15,8	81
		254	12,5	102
40	20	305	10,3	122
		51	92	20
		64	73	25
		76	63	30
		89	51	35
		102	43	41
		115	39,6	46
		127	37	51
		139	32	56
		152	28	61
		178	25,2	71
		203	22,7	81
		254	17	102
		305	14,8	122

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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 mm
50	25	64	156	25
		76	125	30
		89	109	35
		102	94	41
		115	81	46
		127	71	51
		139	66,5	56
		152	60	61
		178	52	71
		203	44	81
		254	35	102
63	38	305	28,5	122
		76	189	30
		89	158	35
		102	131,8	41
		115	116	46
		127	103	51
		152	84,3	61
		178	71,5	71
		203	61,7	81
		254	47	102
		305	38,2	122

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2.3 Spring rate — medium

Colour code: Blue

See figure 1 and table 3.

Table 3

Hole diameter D_H H15 mm	Rod diameter D_a h15 mm	Free length l_o mm	Required force to deflect 1 mm $\pm 10\%$ N	Maximum operating deflection mm
10	5	25	16	9,5
		32	13	12,2
		38	11,9	14,4
		44	10,3	16,7
		51	8,9	19,4
		64	7,5	24,3
		76	5,3	28,9
		305	1,6	116
12,5	6,3	25	30	9,5
		32	24,8	12,2
		38	21,4	14,4
		44	18,5	16,7
		51	15,5	19,4
		64	12,1	24,3
		76	10,2	28,9
		89	8,4	33,8
16	8	25	49,4	9,5
		32	37,1	12,2
		38	33,9	14,4
		44	30	16,7
		51	26,4	19,4
		64	20,5	24,3
		76	17,8	28,9
		89	15,2	33,8
		102	13,5	38,8
		305	4,8	116

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 mm
20	10	25	98	9,4
		32	72,6	12
		38	56	14
		44	47,5	16,5
		51	41,7	19
		64	32,3	24
		76	25,1	28
		89	22	33
		102	19,8	38
		115	18,1	43
		127	16,6	48
		139	15,1	52
		152	13,2	57
305	6,1	114		
25	12,5	25	147,8	9,4
		32	118	12
		38	93	14
		44	80,8	16,5
		51	68,6	19
		64	53	24
		76	43,2	28
		89	38,2	33
		102	33	38
		115	28	43
		127	25,9	48
		139	23,2	52
		152	20,8	57
		178	17,8	67
		203	15,8	76
305	10,2	114		

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 mm
32	16	38	185	14
		44	158	16,5
		51	134	19
		64	99	24
		76	80,5	28
		89	69,1	33
		102	58,8	38
		115	51,5	43
		127	44,8	48
		139	42,3	52
		152	37,8	57
		178	32,5	67
		203	28,9	76
		254	21,4	95
40	20	305	18,3	114
		51	181,6	19
		64	140	24
		76	108	28
		89	90,7	33
		102	81	38
		115	71,8	43
		127	62,7	48
		139	57,5	52
		152	51,6	57
		178	44,1	67
		203	36,7	76
		254	30,1	95
		305	24,6	114

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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 mm
50	25	64	209	24
		76	168	28
		89	140	33
		102	119	38
		115	106	43
		127	97	48
		139	87	52
		152	80	57
		178	69,5	67
		203	59,8	76
		229	50,9	86
63	38	254	43,9	95
		305	38,6	114
		76	312	28
		89	260	33
		102	221	38
		115	187	43
		127	168	48
		152	136	57
		178	114	67
		203	100	76
		229	89,2	86
254	78,4	95		
305	64,7	114		

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