

**LÒ XO XOÀN TRỤ NÉN LOẠI III,
CẤP 2 BẰNG THÉP MẶT CẮT TRÒN**

Thông số cơ bản

Пружины винтовые
цилиндрические сжатия
III класса, разряда 2
из стали круглого
сечения. Основные
параметры витков

Cylindrical helical
compression springs
of III class and of
2 category made of
round steel. Main pa-
rameters of coils

**TCVN
2029 — 77**

**Khuyến khích
áp dụng**

1. Tiêu chuẩn này áp dụng cho lò xo nén loại III cấp 2 có lực khi biến dạng lớn nhất (P_3) từ 315 đến 14.000 N.
2. Thông số cơ bản của lò xo phải phù hợp với chỉ dẫn trong bảng.
3. Vật liệu: dây thép* có đường kính từ 3 đến 12 mm.
4. Phân loại lò xo — theo TCVN 2018 — 77.
5. Phương pháp xác định các kích thước của lò xo — theo TCVN 2019 — 77.

Số hiệu của lò xo	Lực lò xo khi biến dạng lớn nhất P_3, N	Đường kính dây d, mm	Đường kính ngoài của lò xo D, mm	Độ cứng của một vòng $Z_1, N/mm$	Biến dạng lớn nhất của một vòng f_3, mm
1	2	3	4	5	6
1	315	3,0	40	16,00	19,690
2	335		38	18,88	17,740
3	355		36	22,54	15,750
4	375		34	27,22	13,780

* Tạm thời theo ГОСТ 14963 — 69 của Liên xô hay các tiêu chuẩn tương ứng của các nước khác cho đến khi có tiêu chuẩn Việt Nam tương ứng.

(tiếp theo)

1	2	3	4	5	6
5	400		32	33,18	12,060
6	425	3,0	30	41,15	10,330
7			28	51,84	8,681
8	450	3,5	45	20,98	21,450
9		3,0	26	66,57	7,135
10	475	3,5	42	26,30	18,060
11		3,0	25	76,07	6,573
12	500	3,5	40	30,85	16,210
13		3,0	21	87,46	6,060
14	530	3,5	38	36,51	14,520
15		3,0	22	118,30	4,734
16		3,5	36	43,71	12,810
17	560	4,0	52	23,15	24,190
18		3,0	21	138,90	4,320
19		3,5	34	52,89	11,340
20	600	4,0	59	26,39	22,810
21		3,0	20	164,60	3,827
22		3,5	32	64,82	9,718
23	630	4,0	48	30,05	20,960
24		3,0	19	198,10	3,382
25		3,5	30	80,63	8,369
26	670	4,0	45	37,14	18,040
27		3,0	18	240,00	2,953
28		3,5	28	102,00	6,961
29	710	4,0	42	46,65	15,220
30		4,5	60	24,01	29,570

(tiếp theo)

1	2	3	4	5	6
31	750	3,0	17	294,60	2,546
32		3,5	26	131,70	5,695
33		4,0	40	54,87	13,670
34		4,5	55	31,84	23,560
35	800	3,0	16	368,70	2,170
36		3,5	25	151,20	5,291
37		4,0	38	65,14	12,280
38		4,5	52	38,26	20,910
39	850	3,0	15	468,80	1,813
40		3,5	24	173,90	4,888
41		4,0	36	78,12	10,880
42		4,5	50	43,54	19,520
43	900	3,5	22	237,00	3,797
44		4,0	34	94,81	9,493
45		4,5	48	49,77	18,080
46		5,0	65	28,94	31,100
47	950	3,5	21	280,00	3,393
48		4,0	32	116,60	8,148
49		4,5	45	61,73	15,390
50		5,0	63	32,03	29,660
51	1000	3,5	20	331,10	2,994
52		4,0	30	145,70	6,863
53		4,5	42	77,76	12,860
54		5,0	60	37,56	26,620
55	1000	3,5	19	402,60	2,633
56		4,0	28	185,20	5,724
57		4,5	40	91,65	11,570
58		5,0	55	50,00	21,200
59		5,5	75	27,26	38,890
60	1120	3,5	18	492,20	2,275
61		4,0	26	240,40	4,659
62		4,5	38	169,30	10,250

(tiếp theo)

1	2	3	4	5	6
63	1120	5,0	52	60,20	18,600
64		5,5	70	34,10	32,840
65	1180	3,5	17	609,90	1,935
66		4,0	25	276,40	4,269
67		4,5	36	131,20	8,994
68		5,0	50	68,59	17,200
69		5,5	65	43,44	27,160
70	1250	4,0	24	320,00	3,906
71		4,5	34	159,70	7,827
72		5,0	48	78,60	15,900
73		5,5	63	48,14	25,960
74		6,0	80	32,61	39,050
75	1320	4,0	22	439,00	3,007
76		4,5	32	197,30	6,690
77		5,0	45	97,66	13,520
78		5,5	60	56,53	23,350
79		6,0	75	39,45	33,460
80	1400	4,0	21	521,00	2,687
81		4,5	30	246,90	5,670
82		5,0	42	123,40	11,340
83		5,5	55	75,45	18,560
84		6,0	70	49,39	28,310
85	1500	4,0	20	625,00	2,400
86		4,5	28	316,40	4,741
87		5,0	40	145,80	10,290
88		5,5	52	91,03	16,480
89		6,0	65	63,10	23,770
90	1600	4,5	26	412,60	3,878
91		5,0	38	173,90	9,201
92		5,5	50	103,80	15,410
93		6,0	63	70,00	22,860

(tiếp theo)

1	2	3	4	5	6
94	1700	4,5	25	476,00	3.572
95		5,0	36	209,80	8,103
96		5,5	48	119,20	14,260
97		6,0	60	82,30	20,660
98	1800	4,5	24	553,00	3,255
99		5,0	34	256,30	7,023
100		5,5	45	148,50	12,120
101		6,0	55	110,00	16,360
102		7,0	90	41,96	42,900
103	1900	4,5	22	764,50	2,485
104		5,0	32	317,50	5,984
105		5,5	42	188,20	10,100
106		6,0	52	133,00	14,280
107		7,0	85	50,63	37,530
108	2000	5,0	30	400,00	5,000
109		5,5	40	222,80	8,977
110		6,0	50	152,40	13,120
111		7,0	80	61,70	32,410
112	2120	5,0	28	513,70	4,127
113		5,5	38	266,60	7,952
114		6,0	48	174,90	12,120
115		7,0	75	76,36	27,760
116	2240	5,0	26	674,80	3,320
117		5,5	36	322,60	6,944
118		6,0	45	218,50	10,250
119		7,0	70	96,02	23,330
120		8,0	105	44,94	49,840
121	2360	5,0	25	781,20	3,021
122		5,5	34	395,20	5,972
123		6,0	42	277,80	8,495
124		7,0	65	123,30	19,140
125		8,0	100	52,60	44,870

(tiếp theo)

1	2	3	4	5	6
126	2500	5,5	32	491,80	5,083
127		6,0	40	329,70	7,582
128		7,0	63	136,70	18,290
129		8,0	95	62,20	40,190
130	2650	5,5	30	622,40	4,258
131		6,0	38	396,20	6,688
132		7,0	60	161,40	16,420
133		8,0	90	74,29	35,670
134	2800	5,5	28	803,30	3,486
135		6,0	36	480,00	5,833
136		7,0	55	216,80	12,920
137		8,0	85	89,72	31,210
138	3000	6,0	34	590,40	5,081
139		7,0	52	263,40	11,390
140		8,0	80	109,70	27,350
141		9,0	120	47,98	62,530
142	3150	6,0	32	737,30	4,272
143		7,0	50	302,40	10,426
144		8,0	75	135,90	23,180
145		9,0	110	63,72	49,440
146	3350	6,0	30	937,50	3,573
147		7,0	48	347,90	9,629
148		8,0	70	171,80	19,500
149		9,0	105	74,16	45,180
150	3550	7,0	45	437,60	8,113
151		8,0	65	221,20	16,050
152		9,0	100	87,09	40,760
153		10,0	130	57,87	61,340
154	3750	7,0	42	560,00	6,696
155		8,0	63	246,20	15,230
156		9,0	95	103,00	36,410
157		10,0	125	65,75	57,030

(tiếp theo)

1	2	3	3	5	6
158	4100	7,0	40	668,10	5,987
159		8,0	60	291,30	13,730
160		9,0	90	123,50	32,400
161		10,0	120	75,13	53,240
162	4250	7,0	38	805,90	5,273
163		8,0	55	391,50	10,770
164		9,0	85	149,70	28,390
165		10,0	110	100,00	42,500
166	4500	7,0	36	984,50	4,571
167		8,0	52	480,80	9,359
168		9,0	80	183,20	24,560
169		10,0	105	116,60	38,590
170	4750	8,0	50	552,90	8,591
171		9,0	75	228,20	20,810
172		10,0	100	137,20	34,620
173		11,0	140	68,15	69,700
174	5000	8,0	48	640,00	7,812
175		9,0	70	288,70	17,320
176		10,0	95	162,80	30,710
177		11,0	130	86,88	57,550
178	5300	8,0	45	808,60	6,554
179		9,0	65	374,10	14,170
180		10,0	90	195,30	27,140
181		11,0	125	98,83	53,630
182		12,0	160	64,02	82,790
183	5600	8,0	42	1042,00	5,374
184		9,0	63	416,70	13,440
185		10,0	85	237,00	23,630
186		11,0	120	113,00	49,560
187		12,0	150	78,90	70,980
188	6000	8,0	40	1250,00	4,800
189		9,0	60	494,60	12,130

(tiếp theo)

1	2	3	4	5	6
190	6000	10,0	80	291,50	20,580
191		11,0	110	150,90	39,760
192		12,0	140	98,88	60,680
193	6300	9,0	55	674,10	9,346
194		10,0	75	364,20	17,300
195		11,0	165	176,30	35,740
196		12,0	130	126,30	49,880
197	6700	9,0	52	825,20	8,119
198		10,0	70	463,00	14,470
199		11,0	100	207,70	32,260
200		12,0	125	143,70	46,620
201	7100	9,0	50	951,90	7,459
202		10,0	65	601,10	11,810
203		11,0	95	246,70	28,780
204		12,0	120	164,60	43,130
205	7500	9,0	48	1109,00	6,763
206		10,0	63	671,70	11,160
207		11,0	90	297,20	25,240
208		12,0	110	220,10	34,080
209	8000	9,0	45	1406,00	5,690
210		10,0	60	800,00	10,000
211		11,0	85	360,90	22,170
212		12,0	105	257,80	31,030
213	8500	10,0	55	1097,00	7,748
214		11,0	80	446,20	19,050
215		12,0	100	304,30	27,030
216	9000	10,0	52	1350,00	6,667
217		11,0	75	558,50	16,110
218		12,0	95	362,70	24,820
219	9500	10,0	50	1562,00	6,082
220		11,0	70	712,90	13,330
221		12,0	90	437,00	21,740

(tiếp theo)

1	2	3	4	5	6
222	10000	11,0	65	929,80	10,760
223		12,0	85	533,00	18,760
224	10600	11,0	63	1040,00	10,190
225		12,0	80	659,50	16,070
226	11200	11,0	60	1248,00	8,974
227		12,0	75	829,30	13,500
228	11800	11,0	55	1719,00	6,864
229				70	1063,00
230	12500	12,0	65	1390,00	8,993
231	13200		63	1563,00	8,445
232	14000		60	1875,00	7,467